Vol 8

STORAGE

No. XXXII. (NEW SERIES, No. 8.) Price 2s. 6d.

Biological
& Medical
Serials

THE

BIRMINGHAM MEDICAL REVIEW:

A QUARTERLY JOURNAL
OF
THE MEDICAL SCIENCES.

OCTOBER, 1879.

LIBRARY
FEB 20 19[illegible]

BIRMINGHAM:
WHITE AND PIKE, MOOR STREET PRINTING WORKS.

White and Pike, Printers, Birmingham.

SOUTHALL'S SOLUBLE MEAT,

TRADE MARK.

SOUTHALL'S SOLUBLE MEAT

UNIVERSAL EXHIBITION, PARIS, 1878. AWARDED HONOURABLE MENTION. THE ONLY ENGLISH EXTRACT TO WHICH AN AWARD WAS GIVEN.

FROM the fact that beef tea contains only that portion of the meat dissolved by water, we were led to undertake a series of experiments to prove the possibility of obtaining the whole of the beef in a soluble form; that is, in a condition similar to that produced by partial digestion, and by which the stomach could be saved the heavier portion of the work of the natural process. Since beef tea made from fresh meat or from extract of meat has a very low nutritive value—however valuable it may be as an adjunct to easily digested food—it follows that any preparation containing the whole of the beef and not merely the small portion of it, which in its ordinary state is soluble in water, must be looked upon as an exceedingly valuable article of diet for all whose digestive powers have been weakened by disease or other predisposing causes.

TABLE SHOWING THE COMPOSITION OF LEAN BEEF, EXTRACT OF MEAT, AND SOLUBLE MEAT.

LEAN BEEF	EXTRACT OF MEAT	SOLUBLE MEAT
Organic salts, extractives and flavouring matters.	Organic salts, extractives and flavouring matters.	Organic salts, extractives and flavouring matters.
THE ESSENTIAL FLESH-FORMING MATTERS — FIBRINE, ALBUMEN, GELATINE.	Absent.	THE ESSENTIAL FLESH-FORMING MATTERS — FIBRINE, ALBUMEN, GELATINE.
Mineral matter retained by the meat after boiling, chiefly phosphates.	Absent.	Mineral matter retained by the meat after boiling, chiefly phosphates.
Mineral matter soluble in water.	Mineral matter soluble in water	Mineral matter soluble in water.

Soluble Meat can, therefore, give to the system all that lean beef can—the salts to enrich the blood, the various extractives and organic principles which according to the best authorities are to be looked upon as being somewhat of the nature of stimulants; and most important of all when actual nourishment is required, the essential flesh-forming matters—fibrine, albumen, &c.

To the invalid it offers a means of strength not afforded by any other article of diet, and in cases of imperfect assimilation, as an addition to other food, it will give to the system exactly that which it requires, and which, from an enfeebled state of the digestive apparatus, cannot be obtained in sufficient quantity by the natural means.

COD LIVER OIL,

A Prize Medal has been awarded for this Oil at the Paris Exhibition.

By our process of manufacture the solid fatty acids are removed, thus rendering it more digestible than ordinary Cod Liver Oil, and enabling it to keep bright in cold weather.

SOUTHALL'S COD LIVER OIL EMULSION WITH HYPOPHOSPHITE OF LIME.

This Preparation contains [illegible]0 per cent. of COD LIVER OIL, OF OUR OWN MANUFACTURE, and in each table-spoonful a dose of Hypophosphite of Lime.

COD LIVER OIL EMULSION WITH HYPOPHOSPHITE OF LIME AND IRON.

In this Preparation the Iron is a valuable addition to the Emulsion, which, like the former, is pleasant to the taste

ÆTHERISED COD LIVER OIL, as recommended by Dr. B. FOSTER.

PHOSPHORISED COD LIVER OIL.

SOUTHALL'S FIG & SENNA ELECTUARY

Especially adapted for Ladies and Children.

This Preparation, which is in considerable repute amongst the profession, on account of it appearance and pleasant taste, is readily taken by Invalids and Children. It is more efficient and agreeable than Lenitive Electuary

Dose.—Adults, one tea-spoonful before breakfast; Children, according to age.

T. & W. & W. SOUTHALL,

PHARMACEUTICAL CHEMISTS, BIRMINGHAM.

SAVORY AND MOORE'S

SPECIALITIES.

SAVORY & MOORE'S BEST FOOD FOR INFANTS

USED IN THE ROYAL NURSERIES OF ENGLAND AND RUSSIA,

And possessing every requirement necessary in a diet for Children brought up wholly or partially by hand. **Containing the highest amount of nourishment in the most digestible and convenient form. The most perfect substitute for healthy mother's milk.**

N.B.—This Food has only the sweetness of natural healthy milk.

Tins, 1s., 2s., 5s., and 10s.

MEDICATED GELATINE (PATENT)

LAMELS FOR INTERNAL USE.

Consisting of thin sheets, of uniform thickness, accurately divided into squares by raised lines, each square containing an exact dose of the Medicine with which the sheet is impregnated.

Issued in sheets, each consisting of 24 squares. Price 1s. 9d. per sheet.—The Lamels are TASTELESS when swallowed quickly with a little cold water.

HYPODERMIC REMEDIES.

Consist of Small Discs (SQUARE), impregnated with Alkaloids, &c., and are put up in small boxes, each containing 25 Discs. Price 2s. 6d.

The chief features of these Discs are their instant solubility, by which hypodermic solutions can be immediately obtained of uniform and reliable strength; they keep good for an unlimited period in their dry state, and are extremely portable.

OPHTHALMIC REMEDIES.

Comprise Minute ROUND Discs impregnated with a definite proportion of Alkaloids, &c., and are issued in small Tubes, each containing 100 Discs. Price 2s. 6d.

The little round Discs of soft Gelatine have the advantage of slowly softening and dissolving. The Atropine, or other medicament, gradually dissolves out, and is thus placed under the most favourable circumstances for absorption. *Hence much smaller doses serve to produce a marked effect*, by this form of application, than when the drops are introduced.

BLISTERING GELATINE.

OR LAMELLÆ CANTHARIDIS.

The most elegant, efficacious and convenient mode of Blistering. Tins, 1s. 3d.

N.B.—A List of the whole series of Medicated Gelatine Preparations will be forwarded post free on application.

SAVORY & MOORE,

143, NEW BOND ST., LONDON, W.,

AND ALL CHEMISTS THROUGHOUT THE WORLD.

7-79

WOODHALL SPA BATHS,

NEAR HORNCASTLE.

SPA BOARDING ESTABLISHMENT.

Special arrangements are made for the convenience and comfort of visitors. Halls and Passages warmed and ventilated. The Bath House is well heated with steam pipes.

BOARD AND APARTMENTS from £2 12s. 6d. per week.

CASES TREATED—

Rheumatism, Gout, Tumours, Sciatica, Neuralgia, Epilepsy, Scrofula, Obstinate Skin Diseases, Goitre, &c.

The death-rate for the district is 12, against 21 per 1,000 in all England. Rainfall is 22 inches, against 31 throughout England; therefore it is both the driest and healthiest district in the United Kingdom.

WATER AND SALT—COMPARATIVE ANALYSIS.

IN 10 GALLONS.	IODINE.	BROMINE.
Cheltenham	⅓ grain.	1⅔ grains.
Leamington	1 ,,	4 ,,
Kreuznach	1¼ grains.	25 ,,
Woodhall	6⅙ ,, !!!	44 ,, !!!

Champagne, pints	£0	6	0	per doz.	6 doz. for ...	£1	10	0
,, quarts	0	9	0	,,	,, ...	2	8	0
Mutter Lauge (concentrated for external use) ...	£0	2	6	per bottle.				
,, for Baths	0	5	0	per gallon.				
Salt ... ... 1/- and	0	2	6	per bottle.				

CARRIAGE PAID ON ALL ORDERS OF 21s., REASONABLE DISTANCE.

SPECIAL TERMS MADE WITH AGENTS. LIBERAL DISCOUNT TO MEDICAL MEN

ADDRESS MANAGER.

10 79

The

Imperial Life Insurance Company,

No. 1, Old Broad Street, London.

Subscribed Capital,
£750,000.

Paid-up & Invested,
£182,790.

Assurance & Annuity
Fund,
£873,700.

1820.

Total Invested Assets,
(1877)
£1,072,400.

Annual Income, **£130,000.**

SHORT PROSPECTUS.

The Imperial Life Insurance Company was established in the year 1820, under the auspices of The Imperial Fire Insurance Company, which had then been in successful operation for a period of 17 years. It was constituted on the mixed mutual and proprietary principle, whereby the assured are absolutely guaranteed against all liabilities whatsoever, receiving at the same time four-fifths of the entire profit of the business. *The remaining one-fifth is all that the Proprietors receive in exchange for the security afforded by their Capital,* **and even this payment will be seen to be to a great extent, if not entirely, covered, when it is borne in mind that the Company does not issue Profit Policies only, but that about one-fourth part of the existing business is of the non-participating kind,** *and contributes to the general surplus in which the participating Policy-holders share. The "Imperial," therefore, claims to furnish the highest order of security at the minimum of cost to the Assured.*

RESULTS OF THE LAST INVESTIGATION

At the investigation in 1876 it was ascertained that whilst the Assurance and Annuity Fund was £865,714, the calculated value of all the liabilities of the Company amounted to £753,413, leaving a surplus of £112,301 to be dealt with. Of this sum £78,945 was divided **and the proportion of four-fifths belonging to the participating Policy-Holders enabled the Directors to declare a Reversionary Bonus for the quinquennium, of £1. 5s. per cent. per annum on sums assured and previous bonuses,** *a rate varying between £2 3s. 8d. and £1 5s. per cent. per annum on the sums assured* *according to the duration of the Policies.* **The balance of £33 356 was carried to the Assurance Fund as a further guarantee against possible unfavourable fluctuations of mortality.**

The valuation was made on the most sound and rigorous principles, the Table used for valuing the great bulk of the business being that known as the "Seventeen Offices Experience." The capitalised value of that part of the annual premium technically called the loading or margin amounted to £217,000, and, in arriving at the value of the liabilities above indicated, this sum was set apart and specially reserved to provide for future profits and expenses.

The periodical valuations of the Company's Liabilities and Assets take place *once in five years*, and the current period terminates on the 31st of January, 1881. **All insurers with profits before the 31st of January in any year will secure an additional year's share of the Bonus over later entrants.**

GUARANTEED SURRENDER VALUES.

The value of a Policy is a matter of strict calculation, and no invariable rule for arriving at it in particular cases can be laid down, **but the Directors have for many years guaranteed** *as a minimum value* **a return of 40 per cent. of the ordinary premiums paid on participating Policies effected for the whole term of single life, when the bonus has not been surrendered, and a similar return of 35 per cent. in the case of non-participating Policies.** The Policy-holder can thus reckon for himself the minimum amount that he can withdraw at any time, either by the surrender of his Policy *or by way of loan on its security*. The only limitation to this guarantee is that if the Policy be for less than £300 three annual premiums shall have been paid on it.

PAID UP POLICIES.

It often happens that a Policy-holder simply wishes to be relieved of the burden of future payments without desiring to cancel the Assurance altogether. In such cases the Company has always been ready to grant a Paid up Policy for an amount corresponding to the surrender value. The amount varies according to the number of premiums paid, the age of the Assured, and the table originally adopted, so that a reference to the office is necessary.

FOREIGN RESIDENCE AND TRAVELLING.

Persons whose lives are assured, unless in the employment of the Naval and Mercantile Marine, are at liberty to reside and travel, *in times of peace*, anywhere within the limits of Europe, in the British North American Colonies, Southern Australia, New Zealand, the Cape Colony, and all parts of the world distant from the Equator 35 degrees and upwards, North or South, without payment of any extra premium.

Sea voyages from any part of Europe to Cape Colony or to North America, north of 35 degrees N. latitude are also allowed, in times of peace, free of extra charge.

REVIVAL OF LAPSED POLICIES.

Thirty days of grace are allowed for renewal, during which the Policy continues in as full force as if the premium had been paid; twelve months longer are allowed for revival on payment of the overdue premium with a fine, but during the latter half of this extended time a Medical Certificate must be given that the Life Assured is in good health.

SCOPE OF THE BUSINESS.

Every facility is afforded to Assurers for the transaction of business.

The annual rates of premium for assurances for the whole term of life are given on the next page; but premiums may be paid either half-yearly or quarterly, at a slightly increased percentage, and either in one sum or in a limited number of payments. *The premium may also be reduced to about half the usual amount for the first five years without any debt being thereby incurred.*

Assurances for other than the whole term of single life may likewise be effected. For instance, a person may secure a sum to be payable to himself, if he reach a certain specified age, or to his heirs if he should die before attaining that age. This is called an Endowment Assurance. Or, partners may provide for the sum to be drawn out of a business on the death of one of them by effecting a Joint Life Assurance.

Policies may also be effected to secure a sum payable on the last survivor of two or more lives; or on the death of one life (A), provided another life (B) survive. By an assurance of the first kind, the fine for renewal of a lease held on lives may be provided for at a small annual outlay; and by an assurance of the second kind, Reversions which are contingent only, may be secured in any event.

The premiums have been computed with great care and due regard to equitable charges for all ages and all classes of assured, and they will be found to compare favourably with those charged by other offices.

CLAIMS become due three months after satisfactory proof of death has been furnished, and they will be paid under discount at an earlier date if desired, when the claimant's legal title is clear.

MEDICAL FEES and **POLICY STAMPS** are paid by the Company.

SERVICE IN VOLUNTEER CORPS in the United Kingdom is allowed without extra charge.

Forms of Proposal, Prospectuses, and detailed Balance Sheets, as presented to the Board of Trade, may be obtained on application.

ANDREW BADEN,

Actuary and Manager.

ANNUAL RATES

For the Assurance of £100 for the whole term of life.

WITH PROFITS.

Age next Birthday	Yearly £	s.	d.	Age next Birthday	Yearly £	s.	d.
15	1	[illegible]	4	38	[illegible]	[illegible]	4
16	1	[illegible]	[illegible]	39	[illegible]	[illegible]	1
17	1	[illegible]	[illegible]	40	[illegible]	4	11
18	1	[illegible]	4	41	[illegible]	6	[illegible]
19	[illegible]	[illegible]	1	42	[illegible]	[illegible]	11
20	[illegible]	[illegible]	[illegible]	43	[illegible]	11	1
21	[illegible]	[illegible]	[illegible]	44	[illegible]	[illegible]	5
22	[illegible]	[illegible]	[illegible]	45	[illegible]	15	[illegible]
23	[illegible]	[illegible]	[illegible]	46	[illegible]	[illegible]	[illegible]
24	[illegible]	1	1	47	4	1	1
25	[illegible]	[illegible]	[illegible]	48	4	[illegible]	11
26	[illegible]	[illegible]	[illegible]	49	4	[illegible]	11
27	[illegible]	[illegible]	[illegible]	50	4	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	51	4	[illegible]	[illegible]
29	[illegible]	[illegible]	1	52	4	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	53	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	5	54	[illegible]	[illegible]	[illegible]
32	[illegible]	[illegible]	[illegible]	55	[illegible]	[illegible]	11
33	[illegible]	[illegible]	[illegible]	56	5	13	4
34	[illegible]	[illegible]	[illegible]	57	5	[illegible]	1
35	[illegible]	[illegible]	[illegible]	58	[illegible]	[illegible]	1
36	[illegible]	[illegible]	[illegible]	59	[illegible]	[illegible]	5
37	[illegible]	[illegible]	[illegible]	60	[illegible]	14	1

The guaranteed Surrender Value of 40 per cent. applies to this Table.
(See page 2.)

HEAD OFFICE:

No. 1, OLD BROAD STREET, LONDON, E.C.

West End Office.

No. [illegible], PALL MALL, S.W.
[illegible] DELPRATT, Superintendent.

Branch Offices:

BIRMINGHAM—
[illegible] COLMORE ROW,
EDWARD G. WOOTTON, Resident Secretary.

LEEDS—
IMPERIAL BUILDINGS, BOND STREET,
JAMES LEE, Resident Secretary.

LIVERPOOL—
[illegible] EXCHANGE BUILDINGS,
CLIFFORD HOPKINSON, Resident Secretary.

MANCHESTER—
IMPERIAL BUILDINGS, CROSS STREET,
JAMES CROSTON, Resident Secretary.

ANDREW BADEN,
Actuary & Manager.

For the Assurance of £100 for the whole term of life.

WITHOUT PROFITS.

Age next Birthday	Yearly £	s.	d.	Age next Birthday	Yearly £	s.	d.
15	1	[illegible]	6	38	[illegible]	13	[illegible]
16	1	[illegible]	[illegible]	39	2	15	5
17	1	11	[illegible]	40	2	17	1
18	1	12	1	41	2	18	10
19	1	[illegible]	9	42	[illegible]	0	8
20	1	13	6	43	3	2	6
21	1	14	4	44	[illegible]	4	5
22	1	[illegible]	[illegible]	45	3	6	5
23	1	16	[illegible]	46	[illegible]	8	6
24	1	17	1	47	3	10	9
25	1	18	1	48	3	13	3
26	1	19	1	49	3	16	1
27	[illegible]	0	[illegible]	50	3	19	4
28	[illegible]	1	[illegible]	51	4	[illegible]	10
29	[illegible]	[illegible]	4	52	4	6	6
30	[illegible]	3	5	53	4	10	4
31	[illegible]	4	6	54	4	14	4
32	[illegible]	5	8	55	4	18	6
33	[illegible]	6	10	56	5	[illegible]	10
34	[illegible]	8	1	57	5	7	5
35	[illegible]	[illegible]	5	58	5	12	[illegible]
36	[illegible]	10	10	59	5	17	4
37	[illegible]	[illegible]	4	60	6	2	8

The guaranteed Surrender Value of 35 per cent. applies to this Table.
(See page 2.)

PHILIP HARRIS & COMPANY,

Wholesale Druggists and Manufacturing Chemists,

BULL RING, BIRMINGHAM.

Syr. Chloral Hydrate. (Harris & Co.) 2/4 per lb.

One fluid drachm contains ten grains of Liebreich's Pure Chloral Hydrate. Dose, one half to two fluid drachms.

Stypium. (Harris & Co.) 10d. per lb.

Its chief employment is as a dressing after surgical operations, to ensure a healthy ealing. There are very many purposes, such as foul sores, ulcers, and the like, for which this Stypium would prove a valuable dressing, and it is free from the objecionable fluffiness of cotton wool.—*The Chemist and Druggist*, Dec. 15, 1875.

Chlorodyne Opt. (Harris & Co.)

Soluble in Water, 12/- per lb.

Liq. Ferri Iodidi, 1 to 7. (Harris & Co.) 12/- per lb.

Add one fluid oz. to seven fluid oz. of Simple Syrup to form Syr. Ferri Iodid B.P.

Liquor Ferri Phosph. (Harris & Co.) 1 to 3, 5/- per lb.

Add one fluid ounce to three fluid ounces of Simple Syrup to form Syrup Ferri Phosph. P.B. We have been induced to make this convenient preparation, as the Syrup Ferri Phosph. is so liable to change.

Liq. Copaibæ, Cubebæ et Buchu. (Harris & Co.)

Soluble in Water. Dose, One Tea-spoonful. 2/8 per lb.

Lænnic's Specific (Solution of Copaibæ). (Harris & Co.)

Soluble in Water. Dose, One Tea-spoonful. 2/8 per lb.

Liq. Secale Ammoniata. (Harris & Co.)

In Bottles, 3/- each. 10/6 per lb. in bulk.

Cod Liver Oil Emulsion. (Harris & Co.)

Two Table-spoonfuls contain one Table-spoonful of Cod Liver Oil and five grains of Hypophosphite of Lime. In Bottles, price 1/9 and 3/- each.

Vinum Pepsinæ. (Harris & Co.)

Dose, One Table-spoonful. 5/- per lb.

Ess. Rosæ Dulc. (Harris & Co.) 3/6 per lb.

Compatible with Dilute Acids and Alkalies, giving a brilliant colour and pleasant flavour to mixtures.

Coal Tar Soap. (Harris & Co.)

In Boxes containing one dozen Tablets. 4/- per dozen.

Zinci. Oxid Pure. (Harris's.)

Guaranteed to answer the B.P. tests. In 4, 7, 14, and 28-lb. Boxes, also in 1 and ½ lb. Parcels. 1s. per lb. Every package has our seal and label upon it.

Wholesale Agents for Wyeth Bros.' Compressed Chlorate Potash, &c.

Paper Lint, Dialysed Iron and Podophyllin.

AGENTS FOR COX'S COATED PILLS AND SEABURY & JOHNSON'S PLASTERS.

Wholesale Agents for JOHNSON'S FLUID BEEF, in 2, 4, 8, & 16 oz. Tins.

The only Extract which contains ALL the nutrient properties of Beef.

Water, Food, &c., Analysed.

Monthly Drug Lists and Special Lists of Chemical Apparatus and Re-agents free on application.

10-79

SCOTTISH EQUITABLE
LIFE ASSURANCE SOCIE ITY.

Local Directors—
SAMUEL BUCKLEY, Esq., FREDERICK ELKINGTON, Esq.
District Agents—
Messrs. CARTER & CARTER, 33, Waterloo Street, Birm ingham.

NON-FORFEITURE POLICIES are now granted by the Society n a new and improved plan, which combines the advantages of *Moderate Premiums* payable for a limited number of years (11, 22, or 33). *Ultimate Participation of the Profits, Fixed Surrender Val* *ues*, and the issue of *Fully paid-up Policies* without special application to the Directors. See Speci al Prospectus.

This plan has been very carefully devised so as to include all the real adv antages that Insurance admits of.

THE

BIRMINGHAM MEDICAL REVIEW:

A QUARTERLY JOURNAL
OF
THE MEDICAL SCIENCES.

EDITED BY

ROBERT SAUNDBY, M.D. EDIN.,

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON;
EMERITUS PRESIDENT OF THE ROYAL MEDICAL SOCIETY;
AND
ASSISTANT PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

VOL. VIII. (NEW SERIES, VOL. II.)

BIRMINGHAM:
WHITE AND PIKE, MOOR STREET PRINTING WORKS.
1879.

CONTENTS.

—:o:—

REVIEWS.

PAGE.

ANDERSON on Phosphates in Nutrition 152
ALBUMINURIA 210
BERKART on Asthma : its Pathology and Treatment........................ 30
BIGELOW on Litholapaxy 336
BINZ on the Elements of Therapeutics 33
BUCKNILL on Habitual Drunkenness and Insane Drunkards........................ 43
BIGG on Orthopraxy 48
CARTER on Renal and Urinary Diseases 143
CYCLOPÆDIA of the Practice of Medicine...................................... 17
DOBELL on Loss of Weight, Blood-Spitting, and Lung Disease 235
DOWSE on Syphilis of the Brain and Nervous System 343
EWALD'S Lessons on the Digestive Process 341
FINLAYSON'S Clinical Manual for the Study of Medical Cases 27
FERRIER, BARLOW, and HAMILTON on Diseases of the Nervous System... 130
FOTHERGILL on the Heart and its Diseases.................................. 334
GOWERS on Hodgkin's Disease 315
HAECKEL on the Evolution of Man 327
HARRISON'S Clinical Lectures on Stricture of the Urethra and the Disorders of the Urinary Organs.. 25
HARVEY'S First Lines of Therapeutics 338
HERMAN on the Treatment of Pregnancy complicated with Cancerous Disease of the Genital Canal 322
HEWITT on the Mechanical System of Uterine Pathology.......................... 49
KEETLEY'S Student's Guide to the Medical Profession 38
KEENE on Defective Hearing.. 340
KINGZETT on Animal Chemistry 155
LANE'S Lectures on Syphilis 148
MACKENZIE on Diphtheria 229
MACDONALD on Heart Disease and Pregnancy 238
METALLOSCOPY.. 113
NORMAL OVARIOTOMY—"The Castration of Women" 1
THE Operative Treatment of Genu Valgum..................................... 306
TRANSACTIONS of the Bristol Medico-Chirurgical Society........................ 35

ORIGINAL COMMUNICATIONS.

PAGE.
Cerebro-Spinal Meningitis. By JAMES RUSSELL, M.D., F.R.C.P. 51
The Ingleby Lectures. By JOHN CLAY, Professor of Midwifery 64
The Constantly Moist Antiseptic Sponge Dressing. By FURNEAUX JORDAN, F.R.C.S. 85
Jottings from a Surgeon's Holiday Note Book. By JAMES F. WEST, F.R.C.S. 161
Notes suggested by a Case of Aortic Aneurism. By J. W. HUNT, M.D. (Lond.) 175
Case of Rheumatic Hyperpyrexia treated by Cold Baths. By WILLIAM RUSSELL, M.B. (Edin.) 186
Ingleby Lectures, 1879. By JOHN BASSETT, M.D. 243
Anæsthesia by Chloral and Ether. By PRIESTLEY SMITH, Ophthalmic Surgeon to the Queen's Hospital, Birmingham 203
Summer Diarrhœa of Infants. By ALFRED H. CARTER, M.D. (Lond.) 266
The Treatment of Acute Rheumatism. By HENRY MALET, B.A., M.B. (Dublin) 274
Introductory Address delivered at the Opening of the Session 1879-80, at Queen's College Birmingham. By JAMES SAWYER, M.D. (Lond.) 346
The Functional Stage of Granular Kidney. By ROBERT SAUNDBY, M.D. (Edin.), M.R.C.P. (Lond.) 376
Dichloride of Ethidene as an Anæsthetic. By J. HENRY PALMER, Resident Surgeon Birmingham General Dispensary 386

OBITUARY.—John Birt Davies, M.D. (Edin.), F.R.C.P. (Lond.) 100
Thomas Pemberton Pemberton 304

MEDICAL NEWS 105, 200, 281, 297, 392

NEW INVENTIONS, DRUGS, &c. 111

REPORTS OF CASES 101, 196, 277, 390

CONTENTS.

REVIEWS AND NOTICES OF BOOKS.

PAGE.
The Operative Treatment of Genu Valgum 305
Hodgkin's Disease 315
The Treatment of Pregnancy Complicated with Cancerous Disease of the Genital Canal 322
The Evolution of Man 327
The Heart and its Diseases 334
Litholapaxy 336
First Lines of Therapeutics 338
Defective Hearing: its Causes and Treatment 340
Lessons on the Digestive Process 341
Syphilis of the Brain and Nervous System 343

ORIGINAL COMMUNICATIONS.

Introductory Address, delivered at the opening of the Session, 1879-80, at the Queen's College, Birmingham. By JAMES SAWYER, M.D. (Lond.) 346
The Ingleby Lectures. Lecture II. By JOHN BASSETT, M.D. ... 359
The Functional Stage of Granular Kidney. By ROBERT SAUNDBY, M.D. (Edin.), M.R.C.P. (Lond.) 376
Dichloride of Ethidene as an Anæsthetic. By J. HENRY PALMER, Resident Surgeon Birmingham Dispensary 386

REPORTS OF CASES.

General Hospital.—Incompetence of the Pulmonary Valves 390

MEDICAL NEWS.

Queen's College Prize List 392

MEDICINE AND PATHOLOGY.

The Lesions of the Circulatory Organs in Chlorosis and Functional Mitral Insufficiency—Rupture of the Aortic Valve—The Apex-Beat —A Case of Disseminated Sclerosis—Diphtheritic Paralysis—The Temperature of Peritonitis—Is there a Primary Lateral Sclerosis of the Cord?—Changes in the Sympathetic in a case of Progressive Pernicious Anæmia—Rosenstein on Bright's Disease—The Formation of Hyaline Casts—The Diagnosis of Granular Kidney 393

SCOTTISH PROVIDENT INSTITUTION.

MUTUAL LIFE ASSURANCE.

FOUNDED 1837.

FUNDS ... ... £3,500,000.
INCOME ... ... £500,000.

SHORT STATEMENT OF PRINCIPLES.

THIS SOCIETY differs in its principles from any other Office.

Instead of charging rates higher than are necessary, and afterwards returning the excess in the shape of periodical Bonuses, it gives from the first as large an Assurance as the Premiums will with safety bear, reserving the Whole Surplus for those Members who have lived long enough to secure the Common Funds from loss.

The Premiums usually charged for £1,000 (with Profits) will here assure in many cases £1,200 to £1,250 from the first, being equivalent to an *immediate* and *certain* "Bonus" of 20 to 25 per cent.

The whole Surplus belongs to the Members; and being *reserved* for the good lives, large Bonuses *in addition* have been, and may be expected to be, given.

The NEW BUSINESS *has for several years exceeded* ONE MILLION *per annum.*

ANNUAL PREMIUMS FOR £100 AT DEATH (WITH PROFITS).

AGE.	30	35	40	45
DURING LIFE	£2 1 6	£2 6 10	£2 14 9	£3 5 9
TWENTY-ONE PAYMENTS	2 15 4	3 0 2	3 7 5	3 17 6

The Premiums in the former column are about the same as the usual non-participating rates of other Offices.

REPORTS, with full statements of Principles, Rates and Proposal Forms, will be furnished on application to the

MIDLAND BRANCH OFFICE, 38, BENNETT'S HILL, BIRMINGHAM.

GEO. A. PANTON, F.R.S.E.,
Resident Secretary.

THE

BIRMINGHAM MEDICAL REVIEW,

OCTOBER, 1879.

REVIEWS.

THE OPERATIVE TREATMENT OF GENU VALGUM.*

THE subject of Genu Valgum has of late been much discussed, and more especially with regard to the proper treatment to be adopted to remedy the deformity. In those who are afflicted there is visibly a too great inward protrusion of the lower limb, or limbs, at the knee joint, and this is seen not only in children, but also in adolescents. Although there is this marked deformity, it must,

---

*Langenbeck's Archiv. für Klinische Chirurgie. Band xxii., Hefts 2 und 4.
Die Osteotomie. Illustrite Med. Zeit. II., Heft 7, 1852.
Centralblatt für Chirurgie, April, 1879.
Transactions of Société de Chirurgie, February, 1874.
Archives Générales de Médecine, June, 1879.
Edinburgh Medical Journal. Vol. xxi., page 18.
,, ,, ,, March, 1877.
,, ,, ,, July, 1877.
,, ,, ,, May, 1879.
British Medical Journal, May 25, 1878.
,, ,, ,, September 21, 1878.
,, ,, ,, ,, 28, 1878.
,, ,, ,, July 5, 1879.
Lancet, March 30, 1878.
,, November 16, 1878.
,, December 28, 1878.
London Medical Record, June, 1877.

at the onset, be stated that the exact pathological condition giving rise to the same is, at the present time, not definitely settled. On the one hand it is contended, especially by Ollier and other members of the French school, that the lower epiphysis of the femur is at fault, and the result is seen in an hypertrophy of the internal condyle. Owing to this increase in size, the long axis of the tibia is pushed outward, and this in proportion to the hypertrophy of the condyle.

Mr. Barwell, Mikulicz, and the majority of German surgeons, consider, on the other hand, that the epiphysis of the femur is not primarily affected, but that the obliquity lies in the lower part of the diaphysis of that bone, and it may also be in the upper portion of the tibial shaft. In this country, at present, general opinion appears to accept the first hypothesis as the more probable. It may be that both ideas are correct under different circumstances. In the genu valgum of rickets, generally found between the ages of one and six years, it is probable that the shafts of the bones cause the condition, while a similar deformity in adolescents, occurring between the ages of twelve and eighteen, a condylar hypertrophy and subsequent ligamentous changes offer a true explanation. This would seem to be the case from the fact that, in instances of Genu Valgum Adolescentium, the occupation of the subject may be a prominent factor in its causation. According to the statistics of Mikulicz (Langenbeck's Archiv. für Klin. Chirg. Band 22, Heft 4), bakers (hence the common German term for the malady, "Baker's Leg"), factory workers, joiners, lockmakers, and waiters, are most prone, in the order given, to knock-knee. In such cases an orthopædic apparatus has but little effect, while in the ricketty genu valgum of infants a long perseverance with instrumental supports is frequently marked with considerable improvement. It is admitted that, in the latter circumstances, by judicious management, operative measures may be avoided, but, at the same time, it has been shown that equally good and better results, in a much shorter space of time, can be produced by an operation. We therefore proceed to consider the various operations which are now practised for knock-knee ; they may be divided into—

1. Osteo-Arthrotomy.
2. Osteotomy.
3. Subcutaneous fibrous section.
4. Forcible straightening.

1.—*Osteo-Arthrotomy.*—The first cutting operation of which a record has been published, where the knee joint was incised in genu valgum, was performed by Mr. Annandale, in March, 1875. In this the knee joint was opened on the inner side, by means of a longitudinal incision, and then the internal condyle sawn off, also a little of the cartilage covering the external one. As a stiff limb was the result, the operator has not repeated the experiment ; but, although the case in itself was not a successful one, it was the forerunner of a less severe and more efficacious method, for in the following year Dr. A. Ogston, of Aberdeen, performed subcutaneous osteo-arthrotomy, and with such favourable results that his plan speedily became notable. Dr. Ogston's operation is as follows (Edinburgh Medical Journal, March, 1877) : The knee being flexed as fully as possible, a long tenotomy knife is introduced flatly, two to three inches above the tip of the internal condyle, and pushed downwards, forwards, and outwards, until the point is felt in the intercondyloid space. The cutting edge of the tenotome is then turned downwards, and the soft tissues are divided to the bone as its withdrawal is effected. Adams's saw is then inserted and directed along the canal which has been formed, and the inner condyle is sawn through, from above downwards for about three-quarters of its thickness. By forcibly straightening the leg the fracture of the partly detached condyle is completed, and the limb brought into the proper position by the loose condyle slipping upon the sawn surface of the shaft. A long splint, or a weight and pulley with sand bags, is applied for three weeks ; at the expiration of this time passive movements should be commenced. The performance of the operation and the after treatment is rigorously Listerian. The following objections are urged against this plan :—

1st. The knee joint is opened, and an effusion of synovial fluid and blood may take place. The *débris* also, caused by the sawing of the bones, is left to be absorbed in the joint.

2nd. That the articulation is rendered uneven by the uprising of the condyle ; this, it is also asserted, will cause after stiffness of the joint, and flexion will be limited to a right angle.

3rd. That a sharp projecting ridge is left on the inner side of the knee, due to the condyle being pushed up.

4th. That there may be non-union or necrosis of the sawn condyle.

5th. That the ligaments and tendons which help to retain the deformity are not touched.

Most of these objections, it will be found, are more formidable from a theoretical point of view, for, practically, their existence may be ignored. The blood and synovial fluid in the joint soon absorbs, and probably the *débris* with them ; the stiffness of the knee joint is admittedly remedied by exercise, and the projecting ridge becomes rounded by time, and is not, even when most prominent, productive of harm. The other statements have been proved by experience not to hold good. The opening of the joint itself, if properly performed, is shown by statistics not to be dangerous to life. Barker (British Medical Journal, July 5, 1879) states that he has collected forty-five cases where the operation has been completed, and only on one occasion can a fatality be attributed to the procedure. (Lancet, Nov. 16, 1878.) This was a boy, six years of age, who died forty-eight hours after the joint had been opened, of septicæmic pneumonia ; the joint itself was free from inflammation. A case, recorded by Thiersch, of Leipsic (Archiv. für Klin. Chirg. B. xxii., H. 2), cannot in reality be attributed to the surgical procedure, as the patient succumbed from uræmia, due to granular contracted kidneys, six weeks after the operation. An opportunity was thus afforded for examining the changes that had taken place locally. The saw cut was found to have reached the margin of the external condyle, and, at its termination, there was a rugged fracture into the joint; the angle resulting from the breakage was filled up with osseous material, mainly derived from the periosteum. The sawn surface of the condyle and the shaft were separated by three or four millimetres, the gap being full of a delicate red tissue, formed by the organisation of the blood clot. On the cartilages and synovial membrane the remains of blood coagula were also visible. In this case the patient was sixteen years of age.

A slight modification of Ogston's operation is published by Schmitz, of St. Petersburg. (Centralblatt für Chirurgie, April, 1879.) This is its non-subcutaneous performance, but making an incision through the skin in the usual line, and freely dividing the textures down to the condyle, then sawing this through to the periosteum posteriorily. Dr. Schmitz thinks that by these means, everything being seen as it is cut, the direction of the saw can be accurately regulated, that no wrenching of the joint is necessary to complete the fracture, and free drainage is more readily accomplished. The case of a girl, sixteen years old, is recorded upon whom this method had been carried out with every success. It is improbable that this suggestion of Schmitz's will ever supersede the original plan, as, in conjunction with antiseptics, the subcutaneous tunnel offers increased security against the wound becoming putrid.

In order to avoid opening the knee joint, Mr. Reeves performed, on March 17th, 1878 (British Medical Journal, September 27th, 1878), an operation to which he gave the name of "Subcutaneous extra-articular osteotomy." This consists of the oblique introduction of a tenotome just above the most prominent portion of the inner tuberosity and the division of the underlying soft parts and periosteum. A chisel is next passed along the side of the knife, which is then withdrawn. The condyle is separated in a direction at first inwards, then altered to forwards and backwards. By thus manœuvring it is thought that a loosening of the condyle can be accomplished without affecting the cartilage covering it, and so avoiding an opening into the joint. As a matter of practice on the cadaver, it will be found that, in this method, the joint is invariably opened, either with the chisel or by a fissure, when the leg is straightened. This point has also been observed by Santi (Archives Générales de Médecine, June, 1879), and Reeves himself frankly admits the objection, but remarks, if the joint is incised, "that it would be of much less consequence than if opened by the other method, as the wound would be a clean incised one, and more strictly subcutaneous." For the reason just stated we have classified this operation under the head of osteo-arthrotomy.

Taking everything into account, the results of the operations of osteo-arthrotomy in genu valgum are such, that the method is worthy of every consideration, if performed in accordance with antiseptic principles.

2.—*Osteotomy.*—In this division authorities differ as to which bones should be divided. So far back as 1850, Meyer, of Würzburg (Die Osteotomie. Illustrite Med. Zeit. II., Heft 7, 1852), removed a wedge from the lower end of the femur of a patient twenty years of age, with a double knock-knee, and then performed a simple osteotomy of the tibia and fibula on the same side. In the present day, Macewen, of Glasgow, and Chiene, of Edinburgh, think that the deformity caused by the genu valgum can be remedied by operation on the femur alone; Max Schede, of Berlin, on the tibia, while Barwell advocates the efficacy of a method somewhat resembling Meyer's. Dr. Macewen's first operation (Lancet, March 30th, 1878) consisted in the removal of a wedge-shaped piece of bone from the inner condyle of the femur; this was done for the first time on May 19th, 1877, and with such a measure of success that the experiment was repeated on the other leg of the same patient six months afterwards. His fourth operation Dr. Macewen conducted differently, and it is to the following plan that this operator now gives his attention chiefly.* Taking a point half an inch above the upper border of the patella, while the leg is in a state of extension, an incision is made just in front of the tendon of the adductor magnus, reaching the femur at one cut, the length of the wound being about three-quarters of an inch, and equal to the breadth of the largest chisel used. The shaft of the bone is then divided for the inner two-thirds of its thickness by three chisels, the largest of which is used at the commencement; thus a wedge-shaped opening is produced without removal of osseous material. The remaining outer third of the shaft of the femur either snaps or bends when the leg is straightened. The operation is performed antiseptically, and the limb put in splints, like a simple fracture, and kept in position for five weeks. At the end of the sixth week the patient is allowed to rise. The immediate after-consequences are not such as to cause alarm; in the majority of cases the rectal temperature averages 100° F. No removal of dressing takes place until the discharge shows signs of coming through the gauze. Often nothing is done for a fortnight, and when the wound is then seen it is found to be quite superficial. Passive movements are employed as follows: during the first week at the ankle, in the second week the toes and ankle, in the fourth the knee is very gently moved.

The advantages claimed for this method are that the osseous incision is clear of the epiphyseal line, and also of the origin of the popliteus muscle and the attachment of the external lateral ligament, so that these structures, moving with the external condyle, help the rectification of the deformity. In Dr. Macewen's own practice this operation has produced the best results. The idea of removing a wedge-shaped piece of bone from the internal condyle of the femur seems to have occurred to two surgeons almost simultaneously. Dr. Macewen publishes the case in which he had performed such an operation on the 19th of May, 1877, in the Lancet for March 30th, 1878, while we find (Edinburgh Medical Journal, September, 1877) that at a meeting of the Medico-Chirurgical Society, Edinburgh, held July 4th, 1877, Mr. Chiene showed a patient from whose inner condyle he had successfully removed a wedge for the cure of knock-knee. It, therefore, appears as if the last-named surgeon can claim priority in this matter; the method will accordingly be described as Mr. Chiene gives it (Edinburgh Medical Journal, May 19th, 1879). An incision, two or three inches long, is made over the tubercle insertion of the adductor magnus, the tendon of this muscle is exposed, and the incision continued between it and the vastus internus, some fibres of which are divided. The periosteum is incised and turned aside, and a V-shaped portion, the apex being turned downwards towards the intercondyloid notch, is struck out of the internal condyle, with the chisel and mallet, just above the adductor tubercle, and on a higher level than the epiphyseal line. The tibia is then pulled inwards, and the leg so straightened; a weight and pulley, or a long splint, is afterwards applied to the limb. This mode of procedure is considered to be advantageous—1st, From the joint not being opened; 2nd, From the condyle not being separated, merely pressed up; 3rdly, From the crucial ligaments and epiphysis not being interfered with.

---

* Macewen thinks that nine years of age is young enough to perform this operation.

The first advantage stated is obviously open to the same objection, though in a less degree, as that applied to the method of Reeves, for in straightening the leg a fissure is apt to be made from the apex of the V into the joint. It should be stated that Chiene only advises this operation when the condyle is much elongated, but if the deformity can be traced to ricketty malformation in the shafts of the bones, a wedge is recommended to be removed at the affected part. Children are considered the best subjects for this operation.

Mr. Barwell, believing that the cause of the deformity in genu valgum is a ligamentous laxity rather than a hypertrophy of the condyle, thinks that another plan of proceeding should be adopted (British Medical Journal, May 25th, 1878) : this is a division of the femur with a chisel a little above the epiphyseal line, and three weeks afterwards, a similar operation on the tibia just below the tubercle, the fibula also being divided very obliquely an inch below its head. Macewen has also (April 28th, 1878) osteomised the tibia just below the spine in addition to his usual operation, but the fibula being regarded merely as a splint bone, was left intact. This surgeon has not thought it advisable to continue division of the tibia, as equally good results follow osteotomy of the femur alone.

Some German surgeons, notably Max Schede, are of opinion that chiselling a wedge-shaped portion of bone from immediately below the tibial spine is the most efficacious procedure. Cases were shown at the Congress of Surgeons, held in Berlin, in 1877 (London Medical Record, June, 1877), in which this method had been followed with success. The healing process in such instances is stated to be short, the patient soon returning to work. These are the modes of operating on the bones of the lower extremity with the knife, saw and chisel for the relief of knock-knee, the plan by which the soft tissues alone are submitted to cutting is now to be briefly considered.

3.—*Subcutaneous Fibrous Section.*—When Stromeyer's results on subcutaneous division of tendons were made known, the principles were considered applicable for the improvement of knock-knees; in the first instance the tendon of the biceps was severed, but that not being satisfactory, Langenbeck concluded that the external lateral ligament was the cause of the distortion, and so divided it; but still no permanent good was obtained. Billroth sought to advance further by cutting both tendon and ligament, but on several occasions an abnormally lax condition of the joint was left. Reeves (British Medical Journal, September 21st, 1878) combined the section of both the above textures with that of the fascia lata, and produced some improvement, but not complete removal of the deformity. Mr. Jackson, of Wolverhampton (British Medical Journal, September 28th, 1878), has also seen a case in which these structures were divided, and after the external wound had healed, the limb was forcibly straightened under chloroform, and kept in position. In performing this operation it should be borne in mind that cases have been recorded in which the external popliteal nerve has been injured; and, as the method does not claim to remove the deformity, but simply somewhat relieves it, subcutaneous sections cannot be regarded as of material benefit to the patient. This operating on the softer textures has, nevertheless, been of service, by showing that the cause of genu valgum mainly lay in the bones.

4.—*Forcible Straightening.*—This treatment has been strongly recommended by the Lyons school, and especially by M. Delore (Société de Chirurgie, February, 1874), who has practised it on upwards of two hundred patients. The age of eighteen is stated by this advocate to be the limit for the performance of the operation. It is carried out by placing the subject on the back, and after administering an anæsthetic fully, by main force with the hands and knee of the operator, bringing the leg into the normal position; this, if effectual, is accomplished by a series of cracks. When analysed, it will be found that the rectified portion of the limb is due to rupture of the ligaments, and often, if not always, fracture through the epiphyseal line. Sometimes the strength of the operator is not sufficient to bring about this straightening, and then Rizzoli's osteoclast is recommended to be called into requisition. M. Delore states that from five minutes to half an hour is the time required to do what is necessary, but other surgeons, Macewen and Reeves amongst the number, have failed altogether to produce any effect by means of this *redressement forcé* upon the deformity. At all events, it would seem to be only applicable to the genu valgum of ricketty children, and even then, according to Mikulicz, a very long time is necessary to effect a cure, and the force used is apt to leave stiffness of the knee.

Although forcible straightening has been largely practised in France, and in Germany by Volkmann, Kœnig, Billroth and others, surgeons in this country regard it in the light of a rough, unscientific operation, and one not to be recommended in practice, especially when the same correction can be accurately accomplished by more delicate means.

Such, in brief, are the surgical means of treating genu valgum. The number of plans that are now advocated is in itself an argument that the correct method is still to be ascertained ; but the matter is far too important a one to be allowed to rest here. It behoves all who have the requisite opportunities to experiment for themselves, so that by a division of labour the operation giving altogether the best results may be elicited. If the exact pathological causation can only be decided upon, there is but little doubt that practical surgery will speedily indicate the precise and proper treatment of the malady in question.

HODGKIN'S DISEASE.*

NOTWITHSTANDING the great interest that has of late years been excited in this disease, and the comparative frequency of its occurrence, no good account of it has, till now, been given in England, and the enquirer has had to search for information in papers scattered throughout the different medical journals, in the published transactions of the leading medical societies, and in the Guy's Hospital Reports. This great want has been filled, and well filled, by Dr. Gowers in the article under consideration. He has not only brought to light all the widely diffused information, both home and foreign, on this subject, but has also, by his own investigations, brought new light to bear on the disease.

---

* "Hodgkin's Disease." By W. R. GOWERS, M.D. ("Reynolds' System of Medicine." Vol. v.)

The whole paper is replete with information—information, too, presented in a readable form and most clearly expressed, and deserves a far wider circulation among our professional brethren than falls to the lot of articles published in such expensive works as Reynolds' System of Medicine. This must be our apology for the liberal use we intend to make of Dr. Gowers' article in this review.

This disease has had various names applied to it besides that which stands at the head of this article. At one time it was termed by Wilks "Anæmia Lymphatica," by Trousseau "Adenie," while Dr. Gowers prefers, we believe, to call it "Lymphadenosis"—Lymphadenoma is the term applied to the morbid growth.

Dr. Gowers gives the following definition:—"Hodgkin's disease is an affection characterised by a widely spread enlargement of the lymphatic glands, commonly also by an enlargement of the spleen, and by progressive anæmia. The enlargement of the glands and spleen is due to the growth in them of adenoid tissue, having a tendency to undergo a fibroid transformation, and in the spleen to be localised in isolated masses. In many cases disseminated growths of similar structure occur in other organs, especially in the intestinal canal, the liver and the kidneys. The blood presents invariably a diminution in the number of red blood corpuscles, occasionally an increase in the white corpuscles usually inconsiderable."

The etiology of Hodgkin's disease is involved in much obscurity. Out of 114 cases collected by Dr. Gowers, in sixty-two "no antecedent morbid influence could be traced." It does not appear to be an hereditary disease in the strict sense of the word, but certain cases brought forward by our author appear to show a relation to such diseases as phthisis, scrofula, etc., in other members of the same family. According to him, it is three times as frequent in males as in females, and may occur at all ages, but especially "in early and in late adult life." All the cases that have fallen under our own notice have occurred between the age of twenty and forty years. Out of the 114 cases referred to above, constitutional syphilis was ascribed as a cause in three cases; in seven cases there was a history of intemperance, and in five cases of intermittent fever. We believe that Dr. Gowers lays some stress upon malarial influence in the production of this disease. While the disease only rarely commenced during pregnancy, it commenced in several instances soon after childbirth. In one case at present under our own care the disease commenced during lactation. In several cases the outbreak of this affection had for its exciting cause, or, at all events, its starting point, some local irritation.

The paragraph relating to the pathological anatomy of Hodgkin's disease is very clearly written and full of information. Dr. Gowers arranges the groups of lymphatic glands in the following order, according to the frequency of their implication :—(1) Cervical, (2) axillary, (3) inguinal, (4) retroperitoneal, (5) bronchial, (6) mediastinal, (7) mesenteric, and he adds that "nodular growths precisely resembling enlarged lymphatic glands may be found in situations in which the existence of glands is not usually recognised." These may originate in small glandular structures, or by the development of adenoid tissue along the course of lymphatic vessels. The adenoid growth may break through the limits of the capsule of the gland and invade the surrounding connective tissue and contiguous organs, but the skin rarely is affected. Ulceration of the skin may be caused from the effects of pressure and over-distension.

The consistence of the affected glands varies, according to the acuteness and duration of the disease, from extreme softness to almost stony hardness, and occasionally there may be a want of uniformity shown in the consistence in different parts. On section the appearance is usually uniform, the distinction between cortex and medulla being lost, the colour of the whole being of a "whitish or yellowish grey mottled with red in proportion to the vascularity of the gland." Fatty and cheesy degenerations are rare, but have been met with in isolated glands.

In the softer glands the microscope reveals a great increase in the cellular elements which ultimately invade the septa and cause their destruction, giving in this way to the gland its uniform appearance on section. This infiltration not unfrequently extends into the vessels, and along these into the neighbouring tissues. In character the cells resemble for the most part ordinary lymph cells. In the firmer glands the fibrous tissue predominates over the cellular elements, in some cases to such an extent that the latter may be entirely wanting.

The spleen has been found diseased in seventy-five out of ninety-five cases, the enlargement being due to a "simple hypertrophy," or more commonly "to the presence of disseminated growths in the form of minute spots or larger nodules and masses." Corresponding changes have been met with in the medulla, alimentary canal, liver, pancreas, kidneys, peritoneum, ovaries, testicles, supra-renal bodies, thymus gland, lungs, pleura, and other organs, and are all fully dealt with by Dr. Gowers. When describing the pathological anatomy of the growth occasionally found in the lungs, he writes, "they rarely break down, certainly less frequently than do the growths which occur in leucocythæmia." This recalls to our memory an interesting case in which no other cause could be found for a fatal pneumothorax than the supposed breaking down of some such growth, numbers of which studded the lungs, as well as the intestines under their peritoneal investment. The abdominal and mediastinal glands also presented typical specimens of lymphadenoma.

The first symptom to attract the notice of the patient is usually the enlargement of the superficial glands, commencing generally in the neck. This enlargement may be very considerable without there being much constitutional disturbance. At first, enlarging singly, they become adherent one to another, the growth frequently continuing till large masses are formed. Though usually firm in consistence, the reverse may occur, and Dr. Gowers says, on the authority of Bright, that they may be semi-fluctuating, and contain such a large quantity of lymph that, on a puncture being made, there may be a constant flow of lymph from the opening. Dr. Gowers refers to a very important fact, namely, "that an arrest of growth, or even a marked diminution in the size of the glands, may occur before death. It may be so considerable that the enlargement apparently subsides." We can fully bear out our author in this statement. It has occurred with us more than once. Thus in one patient in whom the enlargement of the cervical glands had advanced to such an extent that the side of the face was swollen enormously, and the skin ulcerated through from over-distension ; the growth began to diminish a short time before death, and continued till, on *post-mortem* examination, no difference was to be observed between the two sides of the neck outwardly, further than a little brawny induration on the affected side. It has appeared to us that congestion may play some part in the enlargement of the glands in such cases. In a patient suffering from purpura hæmorrhagica the superficial glands steadily increased in size till shortly before death, and were well marked a few hours before death, but, on *post-mortem* examination, the glands could not be felt through the skin, and when dissected out appeared normal in size, or very nearly so.

These growths are generally painless, unless their increase in size be very rapid or they exercise pressure on neighbouring nerves, and there is also a marked absence of tenderness. The symptoms resulting from the enlargement of the glands, whether external or internal, are mostly due to pressure on surrounding organs. In the thorax these pressure effects are very frequent, but less common in the abdomen since the lax parietes interfere less with their growth. As referred to before, the spleen and liver are frequently enlarged, but, unlike splenic leucocythæmia, the symptoms complained of would not draw attention to these organs. The urine is generally free from albumen, but Dr. Gowers tells us that it may be dark and scanty, and that Dr. Wickham Legg found in one case a trace of indican reaction. When the stomach and intestines are much affected there may be dyspepsia and vomiting and a troublesome diarrhœa. The blood is much altered in condition ; its corpuscular richness is considerably diminished, as can be readily recognised by the use of Dr. Gowers' hæmacytometer. Dr. Gowers tells us that he has seen the red corpuscles reduced to sixty per cent. when the face appeared well coloured. We cannot help thinking that this was an exceptional case, for in our own cases we have not noticed such a large diminution unless there be attendant hæmorrhages ; in fact the diminution has not been so marked as we have seen it in other wasting diseases and in the majority of cases of simple anæmia. As a rule there is no excess of white corpuscles.* Due to the blood condition we have dyspnœa on exertion and less frequently hæmorrhages and anasarca. Pallor of the skin is marked when the disease is fully developed, but it is not uncommonly entirely absent in the earlier stages.

Though lymphadenoma is often accompanied by pyrexia, it is not a necessary symptom. It is absent in about one-third of the cases. Dr. Gowers describes three types : the first, a "continuous" elevation of temperature with slight diurnal variation ; the second type "alternating," there being a high temperature for several days, with only slight daily variations, alternating with intervals of several days in which the temperature is normal or nearly so ; the third type "remittent," there being great morning remissions. A fourth distinct type has come under our notice, corresponding with Dr. Gowers' third type, only the rise in the temperature took place in the morning, and there were marked evening remissions.

The course and the duration of the disease vary much. Three stages have been proposed by Ollivier and Ranvier : "an early development of local gland changes ; the second, the generalisation of the affection, and the third that of the cachexia." Owing to the insidious onset of the disease it is very difficult to determine its duration. According to Dr. Gowers it varies from three or four months to several years. He gives an analysis of fifty cases. In eighteen of these the duration was less than one year, and in fifteen between one and two years, while only in four was the duration over four years. The average duration was over nineteen months.

---

* In a case of a young boy who has come under our care since these lines were penned, though there is apparently much anæmia, the number of red corpuscles varies from ninety to ninety-five per cent. This patient is the only case of lymphadenoma we have seen with an excess of white corpuscles. They average .5 per hæmic unit (.2 normal).

Death generally takes place from asthenia or from some "accidental result of the morbid process." In other cases, and by no means unfrequently, a fatal termination is caused by some intercurrent affection.

For a full account of the pathology of this disease we must refer our readers to Dr. Gowers' excellent paragraph on the subject. Without being too lengthy, it tells us all that is known on the subject, and discusses the principal theories. We should much like to quote largely from it, but, even if we had not already made very free use of his paper, want of space would prevent us from adding more than the following sentences :—" It is thus necessary, in order to explain the phenomena of Hodgkins' disease, to assume the existence of a general dyscrasia, affecting the lymphatic tissues, of different intensity and different operation in different cases, but existing in all. We must regard the affection as primarily constitutional with local growth as the result of that general state and determined often by local causes."

With regard to our knowledge of the best method of treating this disease much yet remains to be discovered. No remedy in any way deserving the title of "specific" has yet been found. In a few isolated cases various drugs have appeared for a time to exercise a restraining influence, but only for a time ; and when tried in other and apparently similar cases, no results have been obtained in any way commensurate with the expectations. To our mind, one of the most important clues to the right treatment of this disease, and one, too, that gives all importance to its early diagnosis, is that obtained by Dr. Gowers himself. A young girl came under his care with a large mass of glands in the axilla, which had been slowly enlarging for some years, and at his request these were excised by Mr. Christopher Heath. By this means the disease was arrested for three years, when it broke out again in regions where operative interference was out of the question. All external applications had failed to produce any permanent benefit. Perhaps the remedy which gives the most hope in our present state of knowledge is arsenic. In our own experience it has failed to arrest the disease, though pushed till it began to produce its toxic effects, as iodine and phosphorus have also failed.

THE TREATMENT OF PREGNANCY COMPLICATED WITH CANCEROUS DISEASE OF THE GENITAL CANAL.*

THIS publication, in a pamphlet form, was originally read before the Obstetrical Society of London, and is a reprint from vol. xx. of their Transactions. It commences with a record of two cases which occurred under the author's own care; a general consideration of the subject is then entered upon; and the latter half of the ninety-five pages is devoted to a table of carefully collated cases.

Mr. Herman is quite right when he says that with regard to the treatment of this grave complication of labour the obstetric authorities of this country have spoken with a hesitating voice, and that "there exist no rules recognised by common consent as those which ought to guide practice."

Passing in short review the cases collected by others, the author takes exception to many of those which Puchelt published in 1840, on various grounds. In this he follows

---

* "On the Treatment of Pregnancy Complicated with Cancerous Disease of the Genital Canal." By G. ERNEST HERMAN, M.R.C.P. Lond. Assistant Obstetric Physician to the London Hospital.

Chantreuil, who remarks early in his own treatise (Du cancer de l'uterus, au point de vue de la conception, de la grossesse, et de l'accouchement. Paris, 1872) on "the unfortunate confusion which exists in this often-quoted work between the different kinds of uterine tumours which may complicate pregnancy." Leon, Dr. West, and Cohnstein, all include Puchelt's cases in those they have published, which therefore contain sources of error. Chantreuil's monograph contains 134 cases, most of which are admirably full, and all trustworthy; the author has therefore included them.

The 180 cases collected by Mr. Herman are classified according to the way in which the pregnancy was terminated, and in each group there are two divisions: those in which the labour ended successfully, and those in which it did not. All cases which survived the puerperal month are classed as successful, those which died before the termination of the month as unsuccessful. His cases "include fifty-one delivered by the natural efforts alone, thirty-five with success, sixteen without; nine in which delivery was aided with forceps, five of them successful, four not; fourteen in which turning was performed, in six cases with a favourable result, in eight without; fourteen in which incisions were made into the cancerous cervix, eleven times with success, in three cases without; twelve cases in which craniotomy was performed, three times with a favourable result, nine times with the reverse; twelve cases in which the Cæsarian section was performed, four times successfully; eleven cases which terminated by rupture of the uterus; thirteen in which the patients died undelivered; ten in which the cancerous part was removed during pregnancy, and five in which it was either removed or spontaneously detached during labour; twenty in which the pregnancy ended in abortion; and lastly, nine concerning which the information given is too incomplete for classification. . . ."

Before commenting upon the management of labours the author proceeds to the consideration of some points in the natural history of this condition, and first he takes "*the influence of cancer of the uterus upon conception.*" In opposition to Cohnstein, who affirms that cancer of the uterus is actually favourable to pregnancy, he agrees in the main with Mauriceau, D'Outrepont, and the older authorities generally, that such influence as it does exercise upon "conception is adverse to its occurrence." Concerning "*the influence of the cancerous cachexia upon the life of the child,*" irrespective of the risks attending the process of delivery," Mr. Herman is of opinion that there is a considerable infantile mortality due to cancer acting before birth, death either occurring in utero before the commencement of labour, or being due "to the feeble vitality of the prematurely expelled child. The cancerous cachexia tends, *per se*, to produce not only the premature expulsion, but the intra-uterine death of the child." What is "*the influence of pregnancy upon the cancer?*" The author, adopting the views of Chantreuil and Barnes, says:—"We know that an abundant supply of blood favours all growth, and that a deficient supply hinders it. We know that the most vascular cancers are the most rapidly growing. Therefore I think we should expect the great afflux of blood to the genital organs in pregnancy to be followed by an increase in the rate of growth of cancerous disease in that part." In support of this theory he quotes a case by Mattei which affords direct evidence in the case of the breast. "In a patient, aged forty-two, during the early months of pregnancy, a small induration was perceived in the left breast, and this distinctly increased in size up to the ninth month. It was painful, and the pain went down the left arm. After delivery, the right breast secreted milk freely, but the left remained small. The induration then ceased to increase, but no treatment was successful in making it disappear. Six months after delivery she again became pregnant, and during this pregnancy the left breast became larger and harder, and an induration became perceptible in the right breast. The left breast then began to ulcerate, and its cancerous nature became unmistakable. Mattei remarks upon its excessive increase with the mammary congestion of pregnancy." In confirmation of this view, it may be remarked that there are several cases in this collection which showed a striking abatement of symptoms when gestation was brought to an end, prematurely or otherwise. In connection with this subject a moot point in diagnosis is indicated ; it is affirmed by Chantreuil that non-malignant induration of the os softens during pregnancy, and that cancer at least maintains its hardness; while Scanzoni, whose views are corroborated by Madame Boivin and Dr. George Roper, holds that the reverse is true.

With regard to "the *cause of death* after delivery," there is nothing in the forty out of the 180 cases quoted by the author, and in which death occurred within the first month after delivery, to show that there is any form of puerperal disease special to cancer ; nor is it proved by the statistics presented in this pamphlet that the cancerous mass receives such injury in the process of labour as leads to a speedily fatal issue.

Having taken each of these points *seriatim*, Mr. Herman arrives at his direct object, which is the consideration of labour itself, so complicated, and he asks "*in what way, when left to nature, is the hindrance to delivery formed by the cancerous cervix overcome?*" In ten cases laceration of the opposing part occurred ; in nine cases, in some of which, however, only a segment of the os was affected, dilatation took place in the ordinary way ; in two cases the mass was pushed on one side, and was compressed between the head and the pelvic wall ; in one a cauliflower excrescence was protruded through the vagina, and returned itself after the birth of the child ; and in two cases the whole or a part of the disease was detached. In all these cases the labours were long, as the cancerous mass does not give way until after prolonged straining. Speaking of the relative value of forceps and turning in the treatment of labour, the author thinks, and his statistics bear him out, that the former are preferable. Incision into the cancerous cervix, he holds, is unattended with danger, and greatly expedites delivery, and has this advantage, that it is purely imitative of nature's own way of overcoming the difficulty. It is certainly of greater advantage than the use of water bags. Of four cases in which dilatation was so obtained two died, and the others suffered severe pyrexia. The twelve cases in which craniotomy was performed were of exceptional difficulty, and do not, therefore, afford fair ground for comment. After Cæsarian section four out of twelve recovered ; in one of these the mass which obstructed delivery disappeared, and was, therefore, probably not cancerous ; the three others were indubitably cancerous, and were operated on at full term. Of the eleven cases of rupture of the uterus all died ; and there are thirteen cases which died undelivered.

A consideration of these twenty-four cases shows that the two prominent conditions were large size of the tumour and great hardness, and these, therefore, are some guide to an estimate of the difficulty to be encountered and, consequently, to the best means of meeting it. Of the twenty cases in which abortion occurred, in two it was artificially produced and was successful, and the remainder prove that the danger from abortion is less than that from labour at full term.

There are "*ten cases in which the diseased part was removed during pregnancy*," and in one only did abortion follow ; five being delivered at full term. There appears to be no great risk of hæmorrhage, and in only one case did the disease return before delivery.

In answer to the question, "*What is to be done in cases of pregnancy complicated with malignant disease?*" the author recommends, if it be possible, the removal of the diseased part ; failing that, the induction of abortion, or in some cases of premature labour. In moderate cases of obstruction incision in several places is efficacious ; and Cæsarian section is indicated when the tumour is so large that the head cannot pass it, and so hard and fixed that no yielding whatever can take place, and where it may even be difficult to find the os. In other cases where the tumour is not so large as to form complete obstruction, but where the os will not dilate after incisions, either craniotomy or Cæsarian section is needed. Mr. Herman's conclusions as to practice are transcribed *verbatim*.

"1. That where it is possible to remove the disease, either during pregnancy or at the time of labour, it ought to be done.

2. That where this cannot be done, the safety of the mother is best consulted by bringing the pregnancy to an end as soon as possible.

3. That when labour has actually come on, expansion of the os uteri should be aided by making numerous small incisious in its circumference.

4. That dilatation of the os uteri being in progress, if uterine action should be deficient, and it become necessary to accelerate labour, the use of the forceps, is, as a rule, better than turning.

5. That when dilatation of the cervix cannot take place, even after incisions have been made, either from rigidity or magnitude of the tumour, Cæsarian section should be performed."

This pamphlet is a valuable contribution to gynæcological surgery, and is well worthy of careful study.

THE EVOLUTION OF MAN.*

WHETHER we believe in, or deny, the "doctrine of Descent," as promulgated by Darwin and his disciples, we cannot help acknowledging that it has elucidated some hitherto inexplicable facts in biology. By the application of Darwinism to the study of comparative anatomy and comparative embryology, these sciences have made rapid advances, more especially in the hands of German naturalists. Among the latter the name of Ernst Haeckel stands out pre-eminently. A perusal of his book will convince any one that he possesses a great knowledge of natural science, and the happy power of communicating his knowledge to others. Where Darwin leaves off Haeckel begins, and carries the doctrine of the former to its furthest limits.

---

* "The Evolution of Man: a Popular Exposition of the Principal Points of Human Ontogeny and Phylogeny." From the German of ERNST HAECKEL, Professor in the University of Jena. London: C. Kegan Paul & Co. 1879.

To understand the evolution of man from the Darwinian standpoint, we must not only study his embryology from the time of the impregnation of the ovum to that of its expulsion at the end of gestation (ontogeny), but we must also study the history of the evolution of the descent of man, that is, of the evolution of the various animal forms through which in the course of countless ages mankind has gradually passed into its present form (phylogeny).

Ontogeny, or germ-history, and phylogeny, or tribal history, are intimately connected ; our knowledge of the connection is well expressed in the "fundamental law of organic evolution" or the "first law of biogeny." This law asserts "*That the history of the germ is an epitome of the history of the descent*; or in other words : that ontogeny is a recapitulation of phylogeny." It means that the series of forms through which the individual organism passes during its progress from the egg-cell to its fully developed state, is a brief, compressed reproduction of the long series of forms through which the animal ancestors of that organism have passed from the earliest periods of "so-called" organic creation down to the present time.

By means of heredity and adaptation ontogeny is dependent on phylogeny, and thus, as Haeckel expresses it, "Phylogenesis is the mechanical cause of ontogenesis."

But in the evolution of the germ (ontogeny) *all* the phases through which the germs of the ancestors of the animal to which the germ belonged had passed, are not reproduced, the epitome of the phylogeny is not complete. Accordingly, ontogeny *alone* sometimes fails to enable us to determine the phylogeny of the animal to which the germ belongs; gaps occur, and we must fill up these gaps by the help of comparative anatomy.

From the fact that the human egg is a simple cell, we infer that man had a unicellular ancestor resembling an amoeba; and because at a later stage the human embryo consists of two germ-layers, we trace man's descent back to an animal composed of two layers, the primitive gastraea, and so on.

But it is necessary to distinguish between *original evolution* (palingensis) and *modified evolution* (kenogenesis); for we may have strange meaningless additions introduced into palingenesis by kenogenesis. Kenogenetic processes are recent additions which have been acquired by the adaptation of the embryo-form, to special conditions of evolution. Thus in the germ-history of man the following are palingenetic processes: The formation of the two primary germ-layers, the appearance of a simple notochord, the temporary formation of gill-arches and openings, the primitive kidneys, primitive brain-bladders, etc.; while as examples of kenogenetic processes may be mentioned, the formation of yelk-sac, allantois and placenta, the amnion, chorion, etc. "The kenogenetic vitiations of the original palingenetic incidents of evolution depend in great measure on a gradually occurring displacement of the phenomena, which is effected in the course of many thousands of years by adaptation to the changed conditions of embryonic existence."

In the ovary the egg of man is a round, moving naked cell, possessing no membrane and consisting only of nucleus and protoplasm; and it is exactly the same as it is in every other animal. Haeckel's deduction from this fact is, that all animals, including man, have descended originally from a one-celled organism, for the first law of biogeny says, that "the ontogeny is but the epitome of the phylogeny;" consequently as the first stage in the germ is that of a nucleated bit of protoplasm, so must the first animal from which man has descended have been a nucleated bit of protoplasm.

In the monera, the whole body of which consists of "plasson" or "primitive fluid" Haeckel discovers the first ancestor of man; but he has to call on spontaneous generation to explain the origin of the monera. The body of this monera is a simple "cytod," consequently the cytod was the first stage of the human pedigree. "By the differentiation of the plasson into nucleus and protoplasm, the organised cell originated from the structureless cytod." When the human egg becomes fertilised it differs from the unfertilised cell: it is now the parent cell, and possesses properties derived from the paternal sperm-cell and the maternal egg-cell; this fertilised cell Haeckel calls the cytula. The amoeba is the prototype of this germ stage, and accordingly is the next step in the pedigree.

The first processes which occur in the evolution of the individual, after the impregnation of the egg-cell is complete, and after the formation of the parent-cell, are essentially similar throughout the whole animal kingdom, and always begin with the so-called yelk-cleavage. The only animals which present an exception to this rule are those which propagate asexually, viz., the protozoa; they never have true eggs, nor do they form germ-layers. All other animals, called in contradistinction metazoa, *have* true eggs, and from their impregnated eggs true germ-layers are formed, in all of them the parent-cell which arises from the fertilised egg-cell separates by repeated cleavage, into a large number of cells, all these cells are descendants from the parent cell, and are called cleavage-cells or cleavage-globules. At a certain stage the entire mass of cleavage-cells divides into two groups, which range themselves into two cell-strata: these are the primary germ-layers.

But the original palingenetic egg-cleavage is not exactly represented in the human egg, because it has been vitiated by kenogenetic processes (*vide* antea), so that we must seek elsewhere for this original form of egg-cleavage. The egg of the lancelet presents it, and resembles in this respect, as has been repeatedly proved, that which occurs in many invertebrates, sea-squirts, pond snails, many star animals, medusæ, and corals, or even in the simplest chalk sponges. Accordingly Haeckel has studied it as it occurs in the Monoxenia Darwinii, a coral. In this animal after the monerula (monera-like stage) or simplest stage, has changed into the cytula stage (parent-cell) the kernel of the parent-cell splits into two similar cells, by the cleavage of these four are formed; these divide again, so that eventually by repeated cleavage, a mulberry-like mass of cells is formed, and this stage is called by Haeckel the *morula.* This solid mulberry germ (morula) changes into a hollow globular vesicle, which soon fills with fluid, the latter beginning to appear first at the centre of the vesicle; the cleavage-cells now part asunder, seek the circumference of the ball, get flattened multilaterally by mutual pressure, and form a single circumferential stratum. This stratum is the germ-membrane (blastoderm), the cells forming it are the germ-membrane-cells; the entire hollow ball is the germ-membrane-vesicle (blastula), and the inner cavity of the ball is the germ-cavity. Inversion of the germ-vesicle now occurs, the ball changes into a cup with a *two-layered* wall; this cup is the germ-cup or the intestinal larva, and is called the *gastrula.*

The gastrula is the most important germ-form of the animal kingdom, for in all metazoa the egg-cleavage results in a true palingenetic gastrula, or in an equivalent kenogenetic germ-form. *Animals of the most diverse tribes develop from one common egg-form.* In different animals we may find by *original* cleavage of the monerula-form a bell-gastrula, or by unequal cleavage a hood-gastrula, or by discoidal cleavage a disc-gastrula, or by superficial cleavage a bladder-gastrula.

The law now follows from what has been said, that man and all animals, which in the first-stage of their individual evolution pass through a two-layered stage, or a gastrula-form, must have descended from a primeval, simple parent-form, the whole body of which consisted throughout life, as now is the case of the lowest plant animals, only of two different cell-strata or germ-layers.

Haeckel then traces the further development of these two layers (ectoderm and endoderm of lower animals); he shows how the outer layer splits into two other layers, skin-sensory and skin-fibrous layers, and the inner into the intestinal fibrous and intestinal glandular layers, and traces the development of each organ and tissue back to them. In describing these four layers and the mode of their development from the first two, he differs from Allen Thomson, in the last edition of Quain's Anatomy, and from Foster and Balfour, but he defends his position for doing so, and apparently with good reason.

These four germ-layers occur not only in man and other vertebrates, but also in mollusca, in arthropoda, in echinodermata, and in the larger worms.

The gastrula-form of the present day presents a complete picture of the primitive gastraea in the Laurentian period. From this gastraea, comparative anatomy and ontogeny teach us, the animal kingdom developed in two diverging lines. In one direction proceeded the plant-animals; in the other the worms (earth-worms, leeches, ascidians, tape-worms, round-worms, etc.)

Haeckel has now arrived at worms as the ancestors of man, and one would think he had some difficulty in stepping from invertebrates to vertebrates, but seizing upon the lancelet he makes the matter easy. We cannot find space to give his arguments, nor those by means of which he tries to show the essential agreement between the chief palingenetic germ-processes in the case of man and in that of other vertebrates. It will suffice to say that he traces the further descent of man through the acrania or skull-less vertebrates, like the lancelet (amphioxus), to the jawless-skulled animals, the fish-like skulled animals, the primitive fishes, mudfishes, gilled batrachians, then to the amnion animals or gill-less vertebrates, the primitive amniota, primitive mammals, pouched mammals, semiapes, and apes. The ape-ancestors of man were first tailed nose-apes, then tailless nose-apes, and lastly, speechless ape-men (Alali.)* Thus man has reached his present state by passing through twenty-one or twenty-two stages.

In the last chapter of this most interesting work the author says : "Among the numerous and important evidences that we have found for the truth of this view of our developmental history, I will only call attention here once more to the peculiarly valuable records of creation afforded by dysteleology, or the doctrine of purposelessness, the science dealing with rudimentary organs. It is impossible to emphasise too often and too strongly the high morphological importance of these remarkable parts of the body, which are, physiologically, completely worthless and useless. In every system of organs we find, in man and in all lesser vertebrates, some of these worthless primeval heirlooms which have been inherited from our lower vertebrate ancestors." He instances the rudimentary covering of hair "the last scanty remains of the much more fully developed hairy covering of our ape ancestors ;" the external ear, "the atrophied remnant of the pointed, freely-moving, and much more highly developed mammalian ear, the muscles of which we retain although we can no longer use them ;" the remains of the nictitating membrane at the inner canthus of the eye ; the projecting rudimentary tail of the embryo, with its caudal muscles ; the unused skin-muscles ; the thyroid gland ; the rudiment of the crop, and the remnant of the hypobranchial groove present in chordonia, ascidia and acrania, the vermiform appendix, etc.

"All these have become useless in consequence of our adaptation to new circumstances, but yet are transmitted from generation to generation by heredity, and have only slowly atrophied."

If our space would allow, we would enter more fully into Haeckel's arguments. What we have given will convey a faint idea of the great merits of his book ; which is not only verbally illustrated with great clearness, but also pictorially, as it contains several beautifully executed plates and numerous wood-cuts.

---

* For a critical examination of Haeckel's theory of the pedigree of man, we would refer to De Quatrefages' recently published book on the Human Species.

THE HEART AND ITS DISEASES.*

It is a very difficult task to write a systematic monograph on the diseases of any organ in the present state of medical science, but especially so on an organ like the heart, which, from its functional relations, has such great importance in the body and has received such a large share of attention in recent years, and which, moreover, is liable to structural and functional diseases, not only of an idiopathic nature, but also as the consequence of a large number of local and general disorders.

The author who sets himself to write on such a theme finds his chief difficulty in determining the limits within which he must restrict himself, not only such limits of space as may be imposed by his publisher, but limits as to the range in which he can permit himself to regard his subject. Dr. Fothergill has taken a very comprehensive view of his duties to his readers. The first chapter describes the morphology of the heart, with a special account of its evolution, written by Mr. Alban Doran. In the chapters on the signs and symptoms, the section on the uses of the sphygmograph is written by Dr. Balthazar Foster. The author throughout helps himself very liberally to extracts, many of them of some length, from the writings of various authorities, which give the book a certain value, but add considerably to its bulk. The descriptions of the physical signs of the various lesions are well written, much better, in fact, than the accounts of the pathological changes, which are sometimes not so exact as is desirable, the reason being, possibly, that in these latter the author has had to rely in the main upon the writings of others. The chapter in the book which is best worth reading is that on "Gouty Heart," as in this the author deals with a department of practical medicine the importance of which is scarcely fully appreciated, and the wide-spread nature of the conditions discussed are by no means indicated by the title. Under this heading Dr. Fothergill deals with all those functional and structural cardiac derangements which are associated with that diathesis, so common in this country, to which the name of lithæmia was given by the late Dr. Murchison, and which includes far more common and less generally recognised types than that in which gouty arthritis manifests itself. The view taken by Dr. Fothergill is that which has already found powerful advocates in Murchison, Broadbent, Mahomed, and others, and may be stated broadly as consisting in the recognition of an imperfect action of the blood depurating organs as the starting point for a cycle of organic changes which, affecting especially the organs of the circulation and the kidneys, carry their remoter processes into the brain, lungs, and stomach, perhaps not sparing any tissues of the body. The highly albuminous diet, indulged in by most Englishmen, together with the use of alcoholic stimulants, create such a demand upon the functions of the digestive system, the liver, kidneys, and skin, that when any or either of these are naturally defective, or become impaired by over-stimulation, the result is the accumulation of waste products in the blood which obstruct the capillary circulation, stimulate the cardiac ganglia, and lead to permanent or constantly recurring high arterial tension, with the consequences of such strain visible in chronic endarteritis, arterio-capillary fibrosis, hypertrophy of the heart, valvulitis, chronic gastric catarrh, cirrhosis of the liver and kidneys, and a host of minor affections.

---

* "The Heart and its Diseases; with their Treatment, including the Gouty Heart." By J. Milner Fothergill, M.D. Second Edition. London: H. K. Lewis. 1879.

Dr. Fothergill's well-known talent as an author makes any commendation of the literary merit of the work superfluous. The frequent interposition within brackets of a German synonym for an English word not occurring in a quotation or reference to a German author smacks somewhat of affectation. There is ample room for difference of opinion on many of the numerous subjects treated of in this book, and in some we do not agree with the views adopted ;

but on the whole the facts are fairly presented, and the reader, guided by such experience and knowledge as he possesses, must judge of them for himself.

LITHOLAPAXY.*

The term Litholapaxy is intended to signify rapid lithotrity with evacuation of the fragments of the calculus at the same sitting, an operation originating with Professor Bigelow, of Harvard University. To explain the views this surgeon holds upon this point, and in order to describe the operation, the necessary instruments, and the mode of using them, the present book has been reprinted from those American journals in which it has previously appeared. The author believes that "the future of lithotrity lies in the direction of a fast-working lithotrite, which, while it effectually protects the bladder, is more powerful than the usual instrument, and better proportioned to the work it is to do—a rapid comminution of the stone—its immediate and complete evacuation, by means of a large tube with an efficient orifice, while the fragments are at will scattered and gathered, for aspiration." The operation, on an average, occupies about an hour and a quarter, and is performed under the influence of an anæsthetic, as follows: the bladder is first injected with water, a lithotrite introduced, and the stone crushed. The instrument Bigelow uses for this purpose differs from Thompson's, in having the shoe of the female blade longer and broader, to prevent nipping of the walls of the bladder, with a slit in the heel, but otherwise non-fenestrated; the male blade, moreover, is provided at its crushing extremity with a series of alternating triangular notches, so as to allow the débris to escape and to prevent clogging, as sharp clinging fragments may lacerate the neck of the bladder in taking out the instrument. The lock for closing the blades is so arranged that it can be worked by a rotation of the right wrist, without the fingers of either hand being displaced. A ball has been substituted for the ordinary wheel, as being more suited to the larger blades. The lithotrite having been withdrawn, a straight catheter, equal in volume to a No. 16, correspondingly large at its internal oval opening, is passed into the bladder. To this is attached from six to twelve inches of india-rubber tubing; if long, the tube should be provided with a small glass trap containing a wire gauze or perforated tube, in order that the water injected may be strained on its return. The other end of the tubing is fastened to an elastic bulb or bottle, capable of containing ten fluid ounces; to the lower extremity of the bulb is connected a glass chamber, into which the fragments of the stone sink as they are extracted from the bladder. By pressing the sides of the bulb together, the water contained is thrown into the bladder. When this compression is taken away, by suction, the fragments are drawn through the catheter and the india-rubber tubing into the bulb, thence they fall into the glass receiver. At the outset the bulb may be worked continuously, but as the fragments become less numerous, time must be allowed for their sinking into the floor of the bladder. After a dozen aspirations, those pieces that can pass will, in all probability, have done so, and if the entire calculus has not been brought away, the lithotrite must again be used, and the same process repeated. A great deal of time is often occupied in making quite sure that no fragments have been left. If the apparatus gets blocked at any part, as it is prone to do, the obstruction can generally be forced out by driving the water from the bulb into the bladder; this failing, a rod must be passed down to the end of the catheter. Dr. Bigelow has performed the operation of litholapaxy some twenty-six times, with one death. We will quote a case for example (No. vii.): "Man, æt. 54.

---

* "Litholapaxy; or, Rapid Lithotrity with Evacuation." By Henry J. Bigelow, M.D. Professor of Surgery in Harvard University; Surgeon to the Massachusetts General Hospital. London: J. and A. Churchill. 1878.

Symptoms two years. Single stone, one inch and a quarter in diameter. Duration of operation, one hour and twenty-five minutes. Lithotrite introduced three times. Quantity removed, 257 grains (the six largest pieces weighed together twenty-four grains). The urine yielded two and a half grains during the next week. Result, rapid recovery, with no subsequent symptoms."

In the fatal case, death took place on the sixth day, although for the first two days the patient seemed to do well. There were no special symptoms, and no *post-mortem* examination could be obtained. In order to aid the explanation of the apparatus, and the various manipulations of the operator, plates are inserted at intervals. There are also some figures, taken from plastic casts of variously distended bladders, "in order to show the effect of a slight pressure in indenting the floor of the bladder, in order to facilitate the approach of fragments."

This book of Professor Bigelow can be recommended as one well worthy of perusal, but whether the operation it advocates will ever supersede the simple one of lithotrity, time and experience can only show; but, at all events, its author has incontestably proved that the bladder is much more tolerant of rough manipulation than is generally supposed.

FIRST LINES OF THERAPEUTICS.*

DR. HARVEY is well known as one of the senior professors in the medical faculty of the University of Aberdeen. In the book before us he has endeavoured to set forth what he conceives to be the true relations of the science and art of therapeutics to the vital processes which occur in disease. Especially addressing himself to the younger members of the profession, he adduces some illustrations of the workings of the "vis medicatrix naturæ," in explanation of the modes and methods of recovery and repair which arise spontaneously in disease, and he adds an account of the varieties of the process of death, in order to show by what changes diseases become fatal. Having thus made clear how "nature" cures and disease kills, when "nature" and disease are respectively left to the exercise of their unaided powers, Dr. Harvey very properly points out that a knowledge of these things underlies the whole science of therapeutics; we must know them if we would understand how far we can "obviate the tendency to death," if we would appreciate the proper *rôle* of therapeutics as the handmaid of the living processes which result in recovery from disease.

---

* "First Lines of Therapeutics: as based on the modes and processes of Healing, as occurring spontaneously in Disease; and on the modes and processes of Dying, as resulting naturally from Disease." By ALEXANDER HARVEY, M.A., M.D., Emeritus Professor of Materia Medica in the University of Aberdeen. London: H. K. Lewis. 1879. Pp. 278.

We are glad Dr. Harvey forcibly draws attention to the absurdity of teaching, or, more truly, attempting to teach, therapeutics at the stage of the medical curriculum which is now allotted to it in almost all the schools. Lectures on drugs and their uses are mostly given to students in their first or second summer session, at a time when their minds are occupied by the perils of their approaching examinations in anatomy and physiology, and when, as a rule, they know nothing of pathology, and have had little or no experience of the clinical progress of disease. When students came to medical schools after spending some years in apprenticeship to practitioners, they were better fitted to understand a course of therapeutics than they are now, when they usually pass directly from the schoolroom to the lecture theatre, without any intermediate experience of the exigences of practice.

Dr. Harvey's book is very suggestive; it bears evidence of thoughtful preparation, and will well repay careful perusal.

DEFECTIVE HEARING: ITS CAUSES AND TREATMENT.*

THIS little book of Mr. Keene's originated in a paper read before the Harveian Society. The causes, diagnosis and treatment of the aural disorders more commonly met with are carefully considered. In the first place, four-fifths of all cases of defective hearing are thought to be due to disease in the middle ear, which primarily commenced as catarrh in the naso-pharynx and spread along the Eustachian tubes. Catarrh of the middle ear is deferentiated from inflammation of the same, the former being seated in the secreting structure of the mucous membrane, and not giving rise to organised material; the latter is described as affecting the submucous tissue; this tissue being the nutrient membrane of the bones, the affection becomes a form of periostitis. The importance of early treatment in ear cases is strongly set forth, a point very often disregarded by patients; according to our author "this is to be accounted for by want of confidence on the part of the public, and can hardly surprise us when we remember that very few years ago none of our hospitals possessed ear departments, and that aural surgery, untaught in our schools, was almost entirely in the hands of quacks. . . . We find even at the present day that works on general surgery contain very scanty and unreliable information on this subject, and this with very limited opportunities for observation; with little time at his command and with no assistance, the medical practitioner continues in the belief, prevalent in his earlier days, that aural surgery is but a delusion and a snare." In treatment, special stress is laid upon the propriety of attending to the nasal air passages, and medicated douches are thought to aid the surgeon. For inflating the middle ear Gruber's modification of Politzer's method is well spoken of, and in cases where it is necessary to wash out thoroughly this portion of the auditory apparatus, paracentesis of the membrana tympani is advised as a means of exit for the injected fluid ; if this patency is required for some time, the opening should be made with concentrated sulphuric acid, and then it will remain for three or four weeks. With regard to syringing and blistering, the author states the former is only justifiable when there is something in the ear that requires removing ; and counter irritants, although nearly discarded by the modern aurist, are sometimes thought to be serviceable in spite of their *modus operandi* being not easy of explanation ; but an indiscriminate use of these remedies cannot too strongly be inveighed against. The appendix consists of a description of a modified syringe for injecting fluids into the middle ear, invented by the writer. This book having already reached its fourth edition is a sufficient guarantee of its usefulness and of its appreciation by the profession.

---

* "Defective Hearing: its Causes and Treatment." By JAMES KEENE, F.R.C.S., Aural Surgeon to the Westminster Hospital; Lecturer on Aural Surgery at the Westminster Hospital Medical School, etc., etc. Fourth Edition, with an Appendix.

LESSONS ON THE DIGESTIVE PROCESS.*

In these twelve lectures Dr. Ewald gives a very complete summary of our present knowledge—so much of which we owe to his own countrymen—of the chemistry and physiology of the processes concerned in digestion. The lectures deal so entirely with details that it is impossible to furnish an adequate synopsis which would be more than a catalogue of their contents. We believe that the author has some thought of publishing an English translation, and we feel sure its appearance would be welcomed as supplying much-felt want in our medical literature. One point of some interest we may allude to. It is disputed whether unchanged albumen is absorbed into the blood. Bernard and Pavy have proved that dissolved albumen, casein, or globulin injected into the blood-vessels appear in the urine, and apparently pass through the organism unchanged. After heavy meals, a small quantity of albumen is not uncommonly found in the urine, and this appears to support the hypothesis that unchanged albumen is absorbed. Brücke, who is one of the supporters of this view, states that he has found coagulable albumen in the lacteals, and also that a completely dissolved mixture of pepsin, albumen, and hydrochloric acid, after neutralisation and removal of the syntonin, contains coagulable albumen. Dr. Ewald thinks that the former observation, coming from such an authority, and assuming that we have not to deal with an anomalous fact, is of importance; but the second, upon which Brücke lays great stress, is only an instance of incomplete digestion, such as frequently occurs in such experiments. If more pepsin and hydrochloric acid are added, the albumen completely disappears. Although the point is a doubtful one, so much appears to him to be certain, that within the organism digestive processes go on much more rapidly and with far greater energy, and their products appear much earlier than in our test-tubes and digesters. As the truth of this doctrine of food albuminuria is of very considerable practical importance, all that concerns the point at issue is worthy of our attention.

---

* "Die Lehre von der Verdauung. Einleitung in die Klinik der Verdauungskrankheiten." Zwolf Vorlesungen, von Dr. C. A. Ewald. Berlin : 1879.

"Lessons on the Digestive Process. An Introduction to the Study of Diseases of the Digestive Organs." Twelve Lectures. By Dr. C. A. Ewald. Berlin : 1879.

SYPHILIS OF THE BRAIN AND NERVOUS SYSTEM.*

In this short volume Dr. Dowse presents us with a summary of his experiences derived from the observation, as he tells us, of 10,000 cases, of whom he has "no hesitation in saying three-fourths were the subjects of acquired or hereditary syphilis." Such an experience, if carefully utilised, would justify the author in regarding himself as entitled to express an opinion on the subject upon which he writes, and compel us to admit that his practical conclusions are worth attention.

As a mere piece of authorship the book is not well executed. There is almost no arrangement, but a running style of argument is adopted throughout, illustrated by numerous abstracts of cases. Many of the chapters are very short, and the evidence adduced extremely scanty. Syphilitic diseases of the sympathetic system are by no means so well established as to make us look with indifference to the chapter with this title, but we find there about a page of reference to other people's work, followed by three short cases which are of decidedly too vague a character for us to express any opinion as to their nature in the entire absence of any anatomical observations.

Dr. Dowse thinks a thickened condition of the rectum a very constant condition in advanced cases of syphilis, and illustrates the statement by a rather clumsy photograph. He also describes a form of cerebro-spinal meningitis occurring in the early period of the secondary stage, of which he gives two cases with *post-mortem* details. In neither case was there any rigidity of the muscles of the neck, in one the temperature never rose above 100° F., in the other it varied from 99° to 104° F. In the former case

---

* "The Brain and its Diseases." Part I. "Syphilis of the Brain and Spinal Cord." By Thomas Stretch Dowse, M.D. London: Baillière and Co. 1879.

post-mortem examination showed that "the membranes covering the pons, the anterior part of the medulla, and the inferior vermiform process of the cerebellum were converted into a gelatinous-looking mass of fibro-corpuscular material of low organisation, but beyond this localised change the membranes and substance of the brain were of normal appearance, save a commencing softening of those parts contiguous to the inflammatory changes. In the other case the "arachnoid and pia mater were seen to be partially adherent" over the convolutions, and at the base of the brain there "was a mass of fibro-corpuscular material of a softish colloidal appearance." No further details are given; we have no account of the state of the cord and no microscopical appearances.

On the question of treatment Dr. Dowse does not believe in iodide and bromide of potassium alone; he regards mercury as necessary in the majority of cases, but considers the presence of amyloid disease to contra-indicate its employment. We do not think Dr. Dowse has done justice to his subject or to himself in his book. Cerebral syphilis is to most of us somewhat of a jumble; Dr. Dowse apparently finds it so, and leaves his readers with that impression of it very strongly confirmed.

New Books Received.

1. —"Medical Ophthalmoscopy." By W. R. Gowers, M.D. London: J. & A. Churchill. 1879.

2. —"Diseases of the Lymphatic System." By S. Messenger Bradley, F.R.C.S.

3. —"Fistula, Hæmorrhoids, &c." Third Edition. By Wm. Allingham, F.R.C.S. London: J. & A. Churchill. 1879.

4. —Transactions of the American Medical Association. Vol. xxix. 1878.

5. —"Manual of Psychological Medicine." By J. C. Bucknill, M.D., and D. Hack Tuke, M.D. London: J. & A. Churchill. 1879.

6. —"First Lines of Therapeutics." By Alexander Harvey, M.A., M.D. London: H. K. Lewis. 1879.

7. —"The Nature of Life." By Ralph Richardson, M.D. London: Second Edition. H. K. Lewis. 1879.

8. —"The Heart and its Diseases." By J. Milner Fothergill, M.D. Second Edition. H. K. Lewis. 1879.

9. —National Board of Health Bulletin.

10. —Canadian Journal of Medical Science.

11. —The Medical Herald.

12. —"Die Lehre von der Verdauung." Von Dr. C. A. Ewald. Berlin. 1879.

13. —"Villous Disease of the Bladder." By Robert S. Hudson, M.D. Dublin. 1879.

14. —"Symptoms of Nervous Exhaustion." By G. M. Beard, A.M., M.D. Chicago. 1879.

15. —"Writers' Cramp and Allied Affections." By the same Author.

16. —"Diseases of Animals which do not necessarily render them Unfit for Human Food." By Francis Vacher. London. 1879.

17. —"Notes on the Small-pox Epidemic at Birkenhead in 1877." By the same Author.

18. —Report on the Sanitary Condition of Birkenhead. By the same Author.

19. —"Mortality in Childbed." By Œneas Munro.

ORIGINAL COMMUNICATIONS.

INTRODUCTORY ADDRESS,

Delivered at the opening of the Session, 1879-80, *at the Queen's College, Birmingham,*

BY JAMES SAWYER, M.D. LOND., MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS; PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS IN THE QUEEN'S COLLEGE; PHYSICIAN TO THE QUEEN'S HOSPITAL.

IT is my duty to-day, when we inaugurate the opening of another academical year, as the representative of the Council and Professors of the College, to address a few words to our old and new pupils in the faculty of medicine. My first words shall be words of welcome. In the name of those who have honoured me by their confidence and on whose behalf I am privileged to speak, I offer a cordial welcome to every student in this theatre. Some of you are here for the first time ; perhaps some of you are proud to count the opening session as the last of your collegiate curriculum ; most of you return to work in which you have already made considerable progress. I hope you all come with a due and deep sense of the responsibilities you are undertaking. I hope you are all filled with an earnest determination to avail yourselves to the utmost of the great opportunities which are given you for learning the principles and practice of our profession—opportunities greater, perhaps, than you are able now to esteem them ; greater, certainly, than many of your predecessors have enjoyed.

All of us may justly be proud of the prosperity and promise of the Birmingham Medical School. For many years its progress has been steady and uninterrupted.

Founded more than half a century ago by my late master, Mr. Sands Cox, whose name can never be mentioned within these walls, which he loved so well, without respect, who opened his lecture-rooms in Snow Hill, in 1828, our school has had a memorable and chequered, and yet an honourable history. Memorable is that history—in that its earlier records register the marvellous success attained by the devoted and unwearied enthusiasm of a very remarkable man. Chequered, alas ! has that history been by petty jealousies and administrative disaster —blots which a later and enlightened harmony long since has swept away, I hope, for ever. But honourable, withal, does that history seem, when we remember the self-sacrificing zeal of a goodly succession of teachers, not a few of whom have ranked with the brightest and best in our profession ; and honourable, too, is our history when we recall a roll of students inscribed by some who have proudly borne the name of our school through the honours lists of colleges and universities, and won their way to the highest eminence in science and in medicine.

Since I first knew the Birmingham Medical School some important and most beneficial changes have been made in its constitution. We no longer see the General Hospital with its little college and the Queen's College with its little hospital forming two distinct medical schools, weakening each other by their rivalry, and dividing the teachers of the town and the students they could attract in ever-varying proportions. First the two colleges became united. The Queen's College of to-day represents the rival Queen's and Sydenham Colleges of a dozen years ago, and still numbers, I rejoice to say, amongst its senior professors several of the teachers of the older schools. This happy fusion, which promises to be indissoluble, was followed by another, and, to my mind, more important, union. Seven years ago the General and Queen's Hospitals, still competing clinical schools, although each was working in conjunction with the united college, became formally associated for the joint practical instruction of students. This co-operation of the two great hospitals of the town—the complement of the amalgamation of the colleges, and without which that amalgamation could scarcely be expected to be permanent—conceived and completed, not without some individual sacrifices, for the welfare of the pupils of the school, has more than realised the sanguine expectations of its promoters. I hope and believe this union will be lasting. You have now the privilege of watching and sharing in the practice of twenty-two hospital physicians and surgeons, who are responsible for the charge of nearly four hundred beds and the yearly care of four thousand in-patients and forty thousand out-patients. You have the advantages of the services of a staff of clinical teachers and the experience of a *clientèle* surpassed in number and extent in only a small minority of the metropolitan schools, and unequalled elsewhere in England. To-day, then, we see the Birmingham Medical School firmly constituted by a happy union of the leading medical and teaching bodies of the town. The General and the Queen's Hospitals, formally sharing the clinical training of our pupils, are linked to the Queen's College to form one school. A liberal and enlightened policy has brought into harmonious association three great kindred institutions for a high and common object ; and it has wisely so united them that they are associated only and not amalgamated, each maintaining its own administrative independence, each preserving full scope for the separate development of its own resources and work, and each reciprocally extending the influence and usefulness of the others. I hope this good genius of co-operation will one day consolidate together and bring into our school all the teaching strength and all the clinical material of this great town, so that your opportunities for obtaining a sound practical knowledge of your profession may be further extended in our Eye and Children's Hospitals, and in our important asylum for the insane.

To train medical students to become medical practitioners and to pass certain examinations which are the legal tests of their fitness to practise are the functions of a medical school. The former function, the higher of the two, although you may not now so estimate it, can be measured by no easily defined standard ; but it embraces many subtle and most powerful agencies—what may be called the "tone" and "surroundings" of the school and the moral influence, example and personal qualities of its teachers. But the way in which a medical school fulfils its second function, that of fitting students to pass the qualifying examinations, can be readily tested. The Royal College of Surgeons of England is the body from which most of the medical students of England obtain the right to practise as surgeons. The Council of that College has published some interesting and important statistics of its examinations. If we examine the last published of these statistics, showing the absolute and relative numbers of students who have passed or who have been rejected from each medical school, for the primary and pass examinations for the diploma of member of the College, during the academical year 1878-9, we shall see that the teachers and pupils of the Birmingham School have abundant reason to be proud of their work. Taking the primary examination and comparing the results therein attained by our own school with those of the eleven schools of London, and also with those of the seven English provincial schools other than our own, I find that the highest metropolitan percentage of rejections is 48.5 ; the lowest, 18 per cent. The average of the rejections from the medical schools of London is 30.3 per cent. For the same examination the percentage of rejections from the Birmingham School is only 15.7 ; less than a third of the largest and worst metropolitan percentage, a very little more than half the average of the London schools, and 2.3 per cent. lower and better than the lowest and best percentage attained by any London school. For this examination, too, the worst English provincial percentage of rejections is 48.75 ; the average is 32.3 per cent. ; the best is that of the Birmingham School, namely, 15.7 per cent. ; not half the average. An examination of the statistics of the pass examination is scarcely less satisfactory. The highest metropolitan percentage of rejections is 38.3; the lowest, 23 per cent. The average of the rejections from the schools of London is 31.3 per cent. For the same examination the percentage of rejections from the Birmingham School is only 17.5 per cent.; 13.8 per cent. below the metropolitan average, and 5.5 per cent. lower and better than the lowest and best percentage attained by a London school. For this examination the worst English provincial percentage of rejections is 53.3; the average is 35.6 per cent.; the best is that of the Birmingham School, namely, 17.5 per cent.; again, not half the average. Comment on these facts is unnecessary; they show, among other things, that excellency in these matters does not altogether depend, as some would seem to think, upon geographical conditions.

Now that I have given you some account of the position and progress of the Birmingham Medical School, I purpose to make a few brief suggestions to our students concerning the conduct and character of their studies. But before I pass on to the second part of my theme, I would notice, in passing, a question which for medical men and medical students is now a "burning question." Let us hope we are now on the eve of important changes in the method and management of the examinations of the licensing bodies, notwithstanding the lamentable indifference of the government, the selfish and short-sighted opposition of the Scotch universities and colleges, and the amazing stupidity of the Medical Council. If I mistake not, the general voice of the profession demands that the constitution of the Medical Council be recast, that that august body develop into something more than a debating society, that its functions be forthwith quickened so that it may at last, after a hybernation of twenty-one years, do something to guard the rights and regulate the responsibilities of medical practitioners, and that what are called the "portals" of the profession be consolidated—we want fewer doors and more windows. The absurd multiplication of licensing bodies in the United

Kingdom, and, in many of these the undue multiplication of licenses, the great differences which have existed in the length and character of the curricula and in the number and stringency of the examinations of the various corporations, combined with the fussy inactivity of the Medical Council, have long afflicted medical students, and the profession generally, no less than the outside public, with evils whose harm it would be as difficult to measure as to exaggerate. There is not now before you, unfortunately, a definite set of examinations which you cannot shirk, if you would, if you would enter our profession, and in preparation for which you must regulate and direct your various studies in due order as to extent, proportion, and succession. But you are bewildered by the choice of "portals," which make unequal demands upon your time, your energies and your pockets, determine in varying degrees your subsequent professional status, fit or unfit you for the highest or lowest professional offices, and some of them so accommodating that you may look forward to entering them if in the end you should fail, pass, or fear to approach their more exacting rivals. Can we wonder at the confused notions which possess the public as to what is connoted by a qualification to practise? At this moment, in the United Kingdom alone, without counting the newly-fledged Victoria University, which I understand has not yet formulated the arrangements of its medical faculty, there are no less than nineteen corporations chartered to confer medical degrees and diplomas. And such is the activity of these bodies that, exclusive of certificates in obstetrics, sanitary science, and dental surgery, in London there are given eleven, in the provinces of England ten, in Scotland nineteen, and in Ireland thirteen medical qualifications, a grand total of fifty-three licences to practise, the possession of any one of which entitles its holder to registration and the exercise of the privileges of a medical practitioner. Surely we have borne these evils long enough. Surely it is incumbent upon every member of our profession to do his best to secure their removal. All honour to those who have so long worked amongst us, in spite of official discountenance and delay, to effect a reform, which cannot now be distant. Let us hope we shall soon see the Medical Council reconstituted, with fuller powers, upon a broader and a juster basis, including representatives of our medical schools and of the profession generally as well as of the corporations, framing rules for examinations, and enforcing punishment on those who practise without authority or unworthily, and the universities and colleges of the land—still preserving their powers for supplementary admission to the higher professional qualifications—united in a real conjoint scheme, providing a well-balanced minimum standard of examination for a licence to practise, uniform as to curricula, stringency and fees, in all divisions of the kingdom.

In your curriculum in this college I hope you will find abundant opportunity for gaining a complete knowledge of the subjects prescribed for your study by the licensing authorities. Each of these subjects must be studied and practised separately if you would gain a clear conception of it ; but they reciprocally support each other ; they are supplementary and ancillary to each other ; their boundaries are interlaced. You must set yourselves to acquire a knowledge of them all, both in their general and practical developments, if you would fully understand the science and intelligently practise the art of healing. These subjects are anatomy, physiology, chemistry, botany, materia medica and therapeutics, midwifery, pathology, medical jurisprudence, surgery and medicine. Each is a science, and each science has its cognate art. A science is systematised knowledge, an arrangement of the leading principles or general truths relating to a given subject ; the art which depends upon and flows from this science consists of the rules of practice and the practice of the rules founded upon the principles of the science. A science has to do with knowing, an art with doing. You must learn each science in order to understand its correlative art ; you must practise each art if you would illustrate and appreciate the principles of its science. We teach you to employ four methods of study, no one of which you can safely neglect: you are required to attend lectures in which the principles of each science are set forth, explained and illustrated; you are required to read for yourselves systematic treatises on each subject; you will have tutorial expositions of your studies by our medical tutor and demonstrators; and you will be required to apply your hands to practical work in the dissecting room, in the museums, in the fields, in the chemical and physiological laboratories, and in the dressing-rooms, wards, and mortuaries of our hospitals. I cannot now attempt to urge upon you either the positive or relative claims of each of the several medical sciences. But let me tell you you must become good anatomists. Anatomy, unlike chemistry, physiology, and pathology, is now, excepting in its histological developments, a complete science. You must master it thoroughly; you can have no excuse for remaining ignorant of any detail of naked-eye human anatomy. If you would practise our profession in any of its branches with a tranquil conscience you must know anatomy. Whatever you have to do for the relief of the sick and suffering you cannot do it best without anatomy. Anatomy is the common ground of the physician and the surgeon; it is the very corner stone of the medical sciences. Here, too, you must equip yourselves with a serviceable knowledge of chemistry and physiology. It will be his own fault if any of you leave this college and be not a sound anatomist, a sound physiologist, and a sound chemist. And here, too, guided by our distinguished professors of medicine, surgery, and midwifery, you must so learn the principles of those sciences that you may appreciate and intelligently share in their application at our hospitals, and thus complete your academic training as sound physicians, surgeons and obstetricians.

I would urge you, with all earnestness, to be diligent in your attendance upon hospital practice. You are required to attend this practice regularly from the very beginning of your course; from the very beginning I say, for the time before you is all too short for the work you have to do.

During the first half of your curriculum hospital practice, which then ought to occupy only a short part of each morning, must, on no account, be allowed to displace your collegiate studies in preparation for the earlier professional examinations of the licensing bodies. The greater part of the first two years of your studentship must be spent in preparation for these examinations. When you shall have passed these primary tests of your knowledge in anatomy, physiology, chemistry, materia medica and botany, when you shall have studied the marvellous structure of the human body and learned something of its healthy development and working, something of the chemistry of the vital processes, and something of the therapeutic preparations commonly used in medicine, you may allow prominence to your hospital work, avail yourselves fully of your great clinical opportunities, and take an active and intelligent part in the relief of pain and the care and cure of cases of injury and disease. Your training must first be mainly scientific and then mainly practical. You must learn the principles of the medical sciences before you can appreciate and apply intelligently the rules of art which those principles supply. By your hospital work I do not mean attendance merely upon hospital practice, but your individual participation therein. If you do your duty, in that practice you must take some active part. You must all hold dresserships and clerkships. If you spend three years in your curriculum, at least your last year, and if your course of hospital attendance extend to four years, as it ought to do at least, at least your last two years should be spent continuously in one or other of these offices. You must not rely too much on clinical lectures and demonstrations. I am sometimes afraid we have rather too much of these good things now-a-days. Nothing must divert you from your own particular work. No amount of reading, no lectures, however able, no demonstrations, however attractive, can teach you to recognise the crepitus of a broken bone, the cachexia of cancer, the crepitation of pneumonia, the fluctuation of an abscess, the rub of pleurisy, or the murmur of a damaged heart. If you would do justice to the ample opportunities which our hospitals afford you for obtaining a competent practical knowledge of your profession, these are among the things your own fingers must learn to feel, your own ears must learn to hear, your own eyes must learn to see, in your close personal observation at the bedside of the sick and suffering.

I hope a genuine and unalterable love of science, a humane and abiding enthusiasm, and an honest desire to earn your bread in the work of an honourable profession, are chief among the feelings which have guided the choice that brings you here to-day. Remember, you have chosen a calling carrying with its practice responsibilities which are often more pressing, more personal, more direct, and more undivided than attach to the pursuit of any other profession. If you would duly fit yourselves now for these responsibilities, which must come upon you hereafter when you pass into practice, you will seriously and constantly strive to make the most of your educational opportunities for the acquirement of professional knowledge and professional skill. But howsoever extended your knowledge, howsoever great your skill, you cannot discharge these responsibilities aright unless you continue to train your hearts in courage and your minds to pure and lofty purpose. Bearing your responsibilities manfully, I would that you should pass from this school with a due sense of the dignity and worth of your calling; not with a contracted and contemptible class conceit, but with broad human sympathies, tempered with that just professional pride which is one of the strongest incentives to sacrifice for any work which tends to foster professional unity or to raise our calling in public usefulness or esteem. Such a professional pride is the surest safeguard of professional probity.

INGLEBY LECTURES, 1879.

LECTURE II.

BY JOHN BASSETT, M.D., PROFESSOR OF MIDWIFERY IN QUEEN'S COLLEGE, BIRMINGHAM.

THOSE of you who were present at my lecture delivered this day week will remember that I then dwelt upon the general changes which occur in the system after impregnation has taken place, upon the altered quantity and quality of the blood, and also upon the results which pregnancy sometimes produces upon the heart and circulation, and lastly, and at greater lĕngth, I enquired into the subjects of œdema gravidarum and puerperal eclampsia, and although I said much, I did not exhaust the material in hand, for the phenomena presented by these cases vary, and are no doubt associated with diverse states of the system ; but all, as far as I am able to judge, have their origin in a faulty condition of the nervous system, such as is associated with, or allied to, other well-known neuroses. But to dwell at greater length on this subject would be contrary to my design.

I return to the object I have before me to-day by reminding you that to the prudent management of pregnancy, and to the proper attention to the disorders of that state, too much attention cannot be paid, for it is a vulgar error to suppose that because a woman is in the family-way that medical treatment is no avail to her, and that she is bound to submit to all the ills incident to her state without complaint and relief. Pregnancy is the time when some of the gravest complications incidental to the puerperal state are nurtured, and hence it is the period when prophylactic measures can be adopted having reference to the safety of the mother and infant. A remarkable instance illustrating the truth of this proposition fell under my notice about a year and a half ago, in the case of a patient who had unpleasant puerperal symptoms after each of her previous confinements. The husband, wanting to be away from home about the time of the expected confinement, called upon me and asked me if I thought I could do anything to prevent his wife having an inflammation. This patient having been under treatment on several previous occasions for irregular action of the heart and kidneys, depending, as I believed, upon a gouty state of the blood, and the labour having been characterised by a want of tonic contraction in the uterus after delivery, I addressed myself to these matters, and the result was that the patient had no unfavourable symptoms after her delivery. This is only a single case, and if there has been no error in observation, it will be important to bear it in mind as future opportunities arise.

Some other grave disorders of the nervous system are now and then associated with or depending on pregnancy, such as neuralgia, paralysis, chorea, and epilepsy. Neuralgia is frequently met with in some of its familiar forms, which we are called upon to administer to the relief of. One very marked case of paralysis of the lower extremities has been under observation for some years, and the patient has borne five children since she has been unable to walk. At one time there seemed scarcely any power in the lower limbs, but at the present time she is able to get about on crutches; the children have been healthy, and the pregnancies and deliveries natural. Epilepsy may or may not be modified by the pregnant state. Recently I have had the opportunity of watching a patient with marked epileptic tendencies through three of her pregnancies. Her friends inform me that before marriage she was somewhat eccentric, and subject to severe headaches; that she recovered very imperfectly after her first confinement, and that the infant died when it was two months old, a circumstance which, in their opinion, preyed upon her mind. She came under my notice when about to be confined with her second child; her labour was tedious, and was followed by hæmorrhage; the recovery was unsatisfactory—depressions, headache, and an epileptic fit were the principal features of the case. After a time she again became pregnant, and I saw her occasionally for headache and depression. The bromide of potassium with iron and a full diet soon relieved these symptoms. Her third confinement was more favourable, but the recovery was not, upon the whole, better than the others; she had another epileptic fit. Her health improved, and she became pregnant again, but without any marked change in her general state, for she rarely went a week without headache; her appetite is usually bad, and she is considered a small eater; her bowels are always confined. Her fourth labour was slow, but otherwise not unfavourable; the recovery was marked by an unusual incident: she had the after-pains rather severely, and one of them culminated in an epileptic seizure. Looking at this patient's state over a period of five years, her general health has not undergone marked deterioration, but the epileptic state has been firmly established, and this will, no doubt, be of ultimate consequence to her. In another instance which fell under my notice some years since, epilepsy commenced during the child-bearing period, and went on to a fatal termination in about four years, without, as far as I could observe, producing any influence upon the pregnant or parturient state. This, like the other patient, was free from the fits whilst pregnant.

The most common nervous phenomena associated with pregnancy are facial neuralgia, salivation, nausea and vomiting. We have the authority of Dr. Barnes for asserting that morning sickness is the most familiar example of nervous disturbance induced by pregnancy; it has been usually regarded as arising especially from uterine reflex irritation; and, undoubtedly, irritation which has its centre in the uterus is the cause of the vomiting, but the reason the vomiting does not occur in all cases of pregnancy would seem to be that in some there is a preternatural irritation of the sympathetic and cerebro-spinal centres. In the opinion of Dr. Henry Bennett all cases of severe vomiting during pregnancy are associated with or caused by congestion and inflammation of the cervix uteri. Dr. Gailly Hewitt maintains that flexion of the uterus is the cause of the sickness, and that the vomiting results from the irritation set up by the altered shape and position of the womb. More recently, Dr. Copeman, of Norwich, has written upon this subject, and has quoted cases in which great relief has followed artificial dilatation of the os uteri. Without discussing these opinions in detail, I have no hesitation in asserting that, so far as my experience has taught me, the nervous theory of the origin of morning sickness is the correct one, as is evidenced by the history of the following four most serious cases which have fallen under my notice. In the first case my advice was sought on behalf of a young lady who was in bed with an uncontrollable vomiting, which greatly alarmed her friends; a careful enquiry into all the symptoms and watching the case for a day or two convinced me that she was pregnant. There was no difficulty after I had stated my opinion in ascertaining that a clandestine marriage had taken place. The severe symptoms soon passed away, and I saw nothing more of her until called to see her one night, when she was eight months advanced in pregnancy, and then she had the early signs of puerperal eclampsia. In a few hours the convulsions were severe and frequent; delivery took place at six o'clock the following morning. The action of the kidneys seemed for a few hours to be suspended, but was restored to a natural state in four or five days; mild maniacal symptoms preceded rational consciousness. This patient has had four other pregnancies: in one of these she vomited incessantly for six weeks, and was thereby so reduced that she was unable to stand upright. I consulted Dr. Russell, and whilst we were considering the propriety of putting an end to the pregnancy nature took the matter in hand, and emptied the uterus. In her other pregnancies she has suffered much from sickness, and has had to keep her bed on each occasion. In the second case, a patient suffered severely from stomach symptoms during several of her pregnancies, and in one of them she kept her bed for two months, vomiting daily a large quantity of bilious matter. I consulted Dr. Elkington as to the propriety of inducing a premature labour; he advised further delay, and after a time the symptoms abated. This patient has for many years suffered from a variety of nervous derangements, such as hysteria-catalepsy and the petit mal. Since the end of her child-bearing she has had hysteria-epilepsy, and more recently has kept her bed for twelve months with symptoms of spinal sclerosis. Three of her children are epileptic. Her father died with labio-laryngeal paralysis; during the middle part of his life he was under treatment for a cardiac neurosis, which at the time he came under my notice had entirely passed away, and had left no recognisable organic change. In the third illustration, a lady was greatly distressed with dyspepsia, nausea and vomiting, when her husband was taken suddenly and dangerously ill; from this time she had not a stomach symptom for a whole month, or until after her husband had recovered from his illness; when her anxiety was removed the stomach symptoms returned as before. In the fourth case, a primipara suffered incessantly from vomiting during her pregnancy, so that she was very pale and thin at the time of delivery; after her confinement puerperal mania came on, and she was ultimately removed to the asylum, where she died. No *post-mortem* was permitted, but Mr. Whitcombe informed me that he had no doubt she had suffered from inflammation of the brain. This patient inherited a weak, nervous system from her father, who died insane. Her marriage had been ill-advised, and this acting upon a sensitive organism brought about the unfortunate result. It may be alleged that these cases are extreme ones, and this is, no doubt, perfectly true. I have selected the four most severe cases which have fallen under my notice, because I think they prove more conclusively than slighter instances whence this unfortunate complication of pregnancy takes its rise. It is, I think, quite fair to regard the slighter form of sickness during pregnancy as an effort of nature to get rid of redundant and irritating secretions, and so long as the inconvenience is confined to the morning no special harm results from it. It is, also, no doubt true that in some of these cases the uterus is out of place, and in others an augmented sensibility has brought about a preternatural tension of the fibres; but if a large number of pregnant women were examined *per vaginam* it would, I believe, be quite impossible to determine from such examinations which of them were suffering from incessant stomach symptoms and which were not.

I now turn to another branch of my subject, in order to say something about the pathology of generation. Many causes hinder conception; these do not concern us at present. Conception having taken place, the ovum may not escape from the ovary, or having done so, may lodge in the adjacent structures, where it will find a nidus and undergo development. It is scarcely conceivable that an ovum can remain for any length of time in the ovary without bursting; when it does it will give rise to symptoms, depending on the age of the pregnancy, of hæmatocele, as will be seen from the histories of the following three cases which occurred in my practice within a short period of each other. In number one, I was requested to see Mrs. F., who was said to be suffering from a miscarriage. Being engaged that evening with another patient, I did not visit her until the following morning, when I was informed that the preceding evening, she being then one week over the time of her usual menstruation, had been seized with a severe pain in the lower part of her abdomen; she had previously from certain feelings suspected herself to be pregnant, and considered that a miscarriage was coming on. The symptoms were pain, faintness and some little flooding; these became gradually worse during the night, and at the time of my visit she was in a state of collapse, so that her friends thought her in a dangerous condition. The countenance was pinched, the surface of the body cool; she had a tight, sinking feeling at the scrobiculus cordis, with a sense of suffocation; the pulse was frequent and feeble, there was a slight sanguineous discharge from the vagina, but no clots. An examination found the uterus pushed downwards and towards the pubis; the recto-vaginal cul-de-sac was filled with a doughy-like swelling; no further serious symptoms followed; the convalescence was tedious. In the second instance, I was sent for to see Mrs. B., who was said to have a miscarriage. Her menstruation had not been very regular, and, therefore, she was a little uncertain as to the existence of pregnancy. Her present symptoms date from a fright in the street, which brought on what she at first thought was a poorly-time, but the pain becoming so severe she judged that a miscarriage was about to happen. When I saw her the pain had abated, and the discharge was so slight that I did not deem it necessary to make a vaginal examination. In two days, the pains having returned, I made an examination: the uterus was small, and it did not feel as if it had been recently impregnated, the pouch of Douglas was occupied by a circular tumour as large as an orange; it could be clearly defined by finger, and separated from the uterus. In the third case, I received an urgent message to attend Mrs. A., who was said to have a miscarriage. I found that she had been a widow for several years and had been recently married to her present husband. She judged herself to be two months pregnant. A short time before my visit she had been seized with an intense pain in the lower part of her bowels, and when I arrived she was groaning and rolling about the bed; there were nausea and vomiting, a cold surface, the pulse imperceptible at the wrist. Morphine was injected, and sulphuric ether administered freely; reaction took place in a few hours. A vaginal examination discovered but a slight discharge of blood; the uterus was enlarged as if from recent impregnation; on the following day the vaginal discharge had increased, and the recto-vaginal septum contained a semi-solid mass. On the third day a membrana decidua was passed; from this time the patient made a favourable recovery.

Without going into the general question of the ætiology of hæmatocele, I think these cases assist in proving that one of the forms arises from rupture of an early ovarian or tubal pregnancy. Gallard, more than any other writer, has insisted upon this being a not unfrequent cause; Nelaton and some others have ascribed like symptoms to be due to the function of ovulation being imperfectly performed; another set of writers have attributed similar symptoms to a rupture of the pampiniform plexus of veins. The ovum may become attached and developed anywhere between the ovary and the mouth of the womb, or it may fall into the abdominal cavity, hence we have several varieties of extra-uterus gestation. It was long thought that the tubal or Fallopian was the most common of these forms; but it would seem from the evidence of Hecker that this is not so, and that the ventral is more common than the tubal by three to one; in this reckoning the ovarian are counted; the tubal is the most serious and fatal. The causes of this anomaly are sometimes obscure: spasm has been named as one, a loss of epithelium from catarrh of the Fallopian tube as another, fixity of the ovary and duct from inflammation, obstruction of the duct by a polypus, alteration of its relations by tumours of the uterus. Nearly all these cases have been verified by *post-mortem* examination. The most curious and interesting variety, which was first pointed out by Dr. Oldham, is where the ovum is found in one Fallopian tube, and the corpus luteum in the ovary of the opposite side. Three explanations of this anomaly have been offered: first, the impregnated ovule may have been swept across the abdomen by ciliary action to the Fallopian tube on the other side; this would resemble what takes place in the amphibia where the ova traverse the abdomen to reach the oviduct; secondly, the left tube may have reached over to the right ovary, and so have taken up the ovule; or, thirdly, the ovule may have passed down one tube, then across the cavity of the uterus, and have lodged in the tube of the opposite side. The second of these explanations is the one that Dr. Oldham and Mr. Wharton Jones thought the most probable. Since this case was related, several others of a similar kind have been published, but no fresh light has been thrown on the subject. When the ovum lodges in the tube, as in this specimen, the case generally comes to a conclusion in ten or twelve weeks by rupture, hæmorrhage and death from shock. When the ovum lodges in the abdomen it may go on to term, an artificial sac being formed of vascular connective tissue; if the child continues alive to the end of gestation a spurious form of labour is established. In one of these pregnancies the child may die at any period; after its death it usually sets up irritation in the walls of the sac, so that an irritative and suppurative fever is established, of which the patient dies, unless she is relieved by operation. But sometimes the dead fœtus gives rise to less irritation, the liquor amnii is absorbed, the sac closes upon the fœtus, and in the course of years it may be converted into a thick pultaceous mass of fat, salts, and cholesterine; in other instances we find a bag of bones and calcareous salts which has been carried in the body for years, doing very little apparent harm.

Three membranes are concerned in forming, receiving, and lodging the ovum in the womb. Two of these, the amnion and chorion, belong to the fœtus; the third is formed in the inner surface of the womb, and is the contribution which the womb makes towards the lodgment and nourishment of the fœtus whilst it remains in utero. This is termed the membrana decidua. Coincident with conception a vascular plethora is established in the pelvic organs; the interior of the womb is the seat of an active cell proliferation, and where the uterus is the seat of inflammation an excessive development of the decidua occurs, as in this instance, constituting one of the forms of membranous dysmenorrhœa. These specimens are generally seen without any appearance of an ovum; but I believe they are nearly always associated with an abortive conception. In a case of this kind related in the current number of the Obstetrical Transactions, a patient who was passing these membranes ceased to do so when separated from her husband. Where chronic decidual inflammation is present, but not to such a degree as to interfere with the life of the ovum, the membrane will be found inflamed and thickened upon its uterine surface, and thus it becomes studded with elevations which assume a polypoid appearance, and this may go to such a degree as to interfere with the life of the ovum. When a miscarriage occurs from this cause the appearances are characteristic. Sometimes we find the membrana decidua greatly thickened, as in this illustration, taken from a patient who died four months after expelling a mass of diseased chorion. In the opposite direction, amongst the enumerated causes of placenta prævia is a too fluid condition of the membrana decidua, thus allowing the ovum to descend too far in the uterus. Cazeaux has suggested that in these cases there may be less swelling of the membrane than natural, and thereby the ovum may descend further than it should. Tyler Smith taught that placenta prævia might arise from the ovule not being impregnated until it reached the lower part of the uterus. More recently it has been pointed out that unnatural size or alteration in the shape of the cavity of the womb may cause this untoward result.

The chorion is a membrane which is found covering the ovum when it reaches the womb. It is regarded as a nutrient organ, and has been likened to the spongioles of a plant. That portion which comes opposite to the decidua when the ovum fixes itself in the womb enters into the composition of the placenta ; the other part becomes smooth, and unites with the amnion to form the bag of membranes in which the fœtus is contained. The chorion is liable to a particular form of degeneration termed hydatigenous. As regards the cause or origin of this irregularity considerable difference of opinion has been expressed. It was originally thought that they were genuine hydatids ; more recently it has been regarded as a dropsy of the cells of the chorion. One writer affirms that the death of the fœtus is the point of departure from regular development ; another, that a diseased condition of the membrana decidua is the cause. The question of syphilis has been introduced into the discussion. In order to understand how this mass is formed it is necessary to bear in mind that the chorion grows by a process of gemmation or budding; and supposing the death of the fœtus is the starting point, then the developmental force is diverted into an unwonted channel, and from the quantity frequently expelled, it would seem as if the process of gemmation might go on *ad infinitum*, being bounded only by the capacity of the uterus to hold the mass; when the entire contents are not discharged a result like what I have shown, or something similar, may follow. The third membrane, or amnion, is regarded as the true fœtal membrane; it is one of three membranes, serous, mucous, and vascular, found as soon as the fœtus begins to form. From the serous layer are developed the trunk, head, and extremities; processes also from it are pushed over the upper and lower part of the fœtus, and thus it forms the amnion or true fœtal envelope. This membrane varies much in its toughness; sometimes it is very friable; in other instances it is ruptured with some difficulty; its function is to secrete the fluid in which the fœtus floats. Whether this fluid performs more than a mechanical office has not been determined; but it is sometimes secreted in excess, and then the nutrition of the fœtus is interfered with, and it may be born dead in consequence. This is a condition which is very apt to recur more than once in the same individual; hence a constitutional cause on the part of the parent has been alleged, and syphilis has been stated to be the agent at work. This idea has been strengthened by its being sometimes associated with hypertrophy of the placenta; but I think I have seen an unnatural quantity of liquor amnii on several occasions, with an ill-nourished fœtus and small placenta, when the question of syphilis could scarcely be raised. In rare instances a condition termed hydrorrhœa is met with in pregnancy; it consists in a discharge of serous fluid from the uterus; it may happen in any part of the pregnancy. Very commonly it is some fluid which has collected between the chorion and amnion; or it may be the hydroperione which Breschet described. It sometimes assumes a most distinct character, as in a case related by Ingleby, and also in one that fell under the notice of Mr. George Elkington, of this town, and which he related to the members of the Social Medical Society. The particulars are briefly these : A lady, more than seven months advanced in pregnancy, had, as she supposed, symptoms of premature labour, from the escape of the waters. She was carefully attended to, but no further signs of labour made their appearance. She had a daily discharge of fluid from the uterus for a period of six weeks, estimated at a pint per day. The labour came on at term ; the child was healthy and fairly nourished. The placenta when examined had in a certain part a cavity between the chorion and amnion ; around this the membranes were greatly thickened, and the hole whence the fluid issued was plainly visible. The case which Ingleby relates is very similar to this.

The tendency to abortion has been traced both to the fœtus and to the mother. No doubt a frequent cause is the death of the fœtus, arising from a variety of causes, such as inflammations and fevers in the mother, or anything that interferes with nutritional changes, as anæmia, or the presence of such a poison as syphilis, mercury, lead, etc. A miscarriage does not necessarily occur immediately after the death of the fœtus, for it need not at once become a foreign body ; the chorion having no function to perform undergoes changes ; the liquor amnii is absorbed ; the fœtus shrinks, and a solution of continuity happening, hæmorrhage is set up, and muscular contraction ensues. In some instances when the death of the fœtus occurs at an early period, the placenta may continue to grow by exosmosis through the decidua scrotina. In such cases the placenta is more developed than the fœtus, and it may be retained in the uterus to the end of term, and have undergone such an amount of thickening as to entitle it to the denomination of mole or fleshy mass. Sometimes the membrana decidua is secreted very scantily, and this is regarded as a frequent cause of the premature loss of the ovum. In other instances, where the result does not go so far, it may produce a small placenta and an ill-nourished child. Amongst maternal causes of abortion are alterations in the position of the womb, and the presence in it of tumours of a fibroid and cancery character. Chronic inflammation of the lining membrane is regarded as a frequent cause, also an irritable state of the mental organism ; but the chief agent in the production of miscarriage is the quantity of blood in the gravid uterus. We have already noticed the increased amount of blood in the body, and the tendency to varicosity which is manifested ; when, then, with the increased blood hyperæmia of the uterus, one or more decidual vessels give way, either as the result of sneezing, coughing, vomiting, concussion of the body, or any other cause, an effusion of blood takes place into the placenta, producing an apoplectic condition and the death of the fœtus ; the ovum acts as an irritant, the muscular fibre is set in motion, and it is thrown off. It is often difficult to tell in any given case whether the death of the fœtus has preceded or has followed the effusion of blood. The blood in all cases is considered to be maternal, and it gives the placenta a characteristic appearance, which is depicted in all the text-books on midwifery ; the chorion and amnion are pushed forward, and assume the appearance of circular nipple-shaped prominences ; these, when cut into, are composed of masses of black blood. It is a question whether these projections are formed before or after the death and collapse of the fœtus. The quantity of effused blood necessary to produce a miscarriage varies according to the time of the pregnancy : the earlier, the smaller the quantity; later, a profuse loss is sometimes borne with impunity. Further, the result is often determined by the healthiness or otherwise of the pregnancy, and the situation of the placenta to the os uteri : for if it is near, and the blood can flow away freely, but little irritation is excited ; when blood is effused into the substance of the placenta, but not in sufficient quantity to detach the ovum or set up reflex uterine action, a series of changes takes place in this order

—the blood cells rupture, and their fluid and coloured parts are absorbed ; the fibrine which remains behind undergoes an attempt at organisation ; new vessels are projected through the maternal decidua, and, according to the testimony of Scanzoni, a cellular tissue is developed, whereby thickening and adhesion result ; the vessels increase in size, and a general hypertrophy follows. The seat of this change is principally the decidua serotina. The microscope shows the villi of the chorion as molecular masses containing fat-cells ; a specimen of this kind would be termed a fleshy mole. Another change the placenta undergoes when the pregnancy is interrupted, but does not come to a termination, is fatty degeneration. Here is a specimen which was retained in utero four months after the death of the fœtus. In this instance, a delicate young lady, with a weak heart, took a long walk, which produced great fatigue with faintness, after which she did not feel the child. When the ovum was expelled the placenta had the appearance, to the naked eye, of fat ; it contained no signs of extravasated blood, and no vessels or lymph could be seen ; the lobes were compressed and pointed ; the action of the spirit in which it has been preserved has destroyed its characteristic appearance.

The placenta, although an ephemeral organ, performs a highly important function ; two-thirds of it consists of fœtal blood-vessels bound together by loose cellular attachments ; it as well as the membranes around it are particularly liable to inflammation, a result which is observed, especially for one or two inches around the margin, where vascularity and lymphy deposit and tissue thickening may be frequently seen ; more rarely a ring of fibrous tissue is thrown out which limits the area of the lobes, so that they grow in thickness instead of width. Evidence of inflammation is also frequently found in the lobes in the membrana serotina, as well as in the villi of the chorion and the sheath in which they are contained ; proliferation of tissue occurs, the vessels become compressed, and ultimately the villi of the chorion undergo fatty degeneration and atrophy. Sometimes the placenta is adherent to the wall of the uterus either over a limited portion or its entire extent; the appearances which adherent placenta present vary considerably; sometimes the lobes have a milky-white appearance, in others the decidua is obviously thickened and roughened, or is even converted into a cretaceous mass; often, however, when cretaceous degeneration has occurred the placenta separates more readily than natural. A note from my midwifery register will further illustrate this subject: "August 24th, 1868.—In this case nearly the whole of the placenta was intimately adherent to the wall of the uterus, a distinct sensation of breaking down, an adhesion was communicated to the finger as the lobes were separated one by one; when the uterine surface of this placenta was carefully dried nearly every lobe was found to be denuded of its decidua, so that the spongy structure was plainly seen." In some of the instances I have met with it has seemed as if the caducous change associated with the ripening of the placenta, whereby it becomes unfit to further nourish the fœtus, has not taken place, and from this reason the placenta has not seemed to act to the uterus as a foreign body, for the uterus has made no effort to throw it off. This condition of adhesion having been found in one pregnancy is very liable to recur on subsequent occasions.

The placenta is now and then the seat of an apoplectic effusion, which may invade several lobes, then the blood assumes a cup-like appearance, the coloured part being absorbed from without leaves a black clot in the centre, or the effusion may be in a single mass, ploughing up and compressing the substance of the placenta, as is seen in this illustration. Sometimes we find the placenta converted into hard, yellowish-white masses, as is here seen, the natural structure being entirely destroyed; the effusion will be found to be in various stages of change. In a third example you will observe that the healthy structure is equally lost; but the first thing that strikes the eye is the increase of size; combined with this the lobes are all kinds of shapes and colours, some compressed and elongated, others in the centre white, conical and bloodless; on the right and upper part are several lobes with a dark, congested look; they are less diseased than the remainder. You will observe that in several parts the decidua is wanting, so that the surface has a torn appearance; in others the milky-white look of which I spoke recently is very plainly seen. This specimen illustrates well the appearances met with in one of the forms of adherent placenta. In the fourth diagram the placenta is small, without a single healthy lobe; it has a yellowish-white bloodless appearance with a few apoplectic points. In all these specimens the children were born dead, and some of the mothers have died since, one with heart disease, another from consumption. Appearances similar to these are frequently met with in one or more lobes, and the remaining portion of the placenta being healthy, and each lobe being provided with separate blood-vessels, the nutrition of the child is not seriously interfered with. These appearances follow effusions of blood and lymph, attempts at organisation, and subsequent metamorphic changes; other appearances are seen in the placenta. Once I attended a patient who had during her pregnancy been under treatment for phthisis; the child was born dead, and was believed to have died at the beginning of labour; the placenta was converted into a white tubercular-looking mass. Before passing from this subject, it may be well to state that the idea is gaining ground that the placenta acts as a fœtal eliminant and emunctory, and not solely as an organ or channel of nutrition, and that some of the diseases met with in the placenta arise from this cause. I shall not enter on this conjectural theme now; an advancing physiology and pathology will reveal to a future generation what is hidden from our sight.

I have hitherto said nothing about the influence which syphilis produces upon the placenta. Here is a note taken from my case-book about a syphilitic placenta, giving the naked-eye appearances: "May 11th, 1868.—Mrs. N., delivered at the full time of a female child, which was computed to have been dead three weeks; has had two dead children before, and three healthy ones; before the syphilis the placenta is on the fœtal surface lymphy; on the maternal surface the centre lobes are pale and ex-sanguine, with lymphy deposits undergoing cretaceous change, the outer lobes gradually thinned towards the circumference and consolidated with lymphy deposit, the membranes around the placenta coated with lymphy sanguineous material." This subject has been further studied in recent times by several continental observers; and the influence which syphilis produces upon the placenta seems to vary according to whether the father has syphilis only, or the mother only, or whether both parents are suffering at the time of conception. When the father is primarily affected the disease begins in the villi of the chorion, which become the seat of an active cell proliferation, leading to a great multiplication of the epithelial cells and thickening of the cell wall; the thickening proceeding outwards, the rows of connective tissue nuclei become arranged in circles, and the villi are greatly increased in size and weight; the vessel is finally obstructed, and subsequent atrophy ensues. If the mother is primarily affected, the disease attacks the membrana decidua, and shows itself by an increased growth of the connective tissue, and hypertrophy of the large cells which are found there, leading to compression and obstruction of the villi. Where the father and mother are both affected the two conditions just described go on concurrently. This condition is regarded as an inflammatory one, leading to thickening and consolidation of placental structure, and causing the lobes to assume the nummose and other conditions described by various writers. It seems more than probable that when inflammation attacks the minute structure of the placenta, whether it be common or specific, its results follow the ordinary law of inflammatory products, and undergo those changes which are well understood as taking place in newly-formed and partly adventitious products. These changes which I have just described were pointed out by Virchow and other observers. They were described by Killian and Robin as fatty degeneration, and until Wagner, of Berlin, demonstrated certain changes in the bones of syphilitic children it was not possible to separate specific from common inflammation of the placenta. Now, it would seem as if the idea of fatty degeneration, generally held with reference to the placenta, must be given up, and the changes observed regarded as inflammatory products, producing obstruction and thickening of the vessels and effusion into the annexed cellular tissue ; this undergoing contraction produces the changes already described, and seen in various stages according to the age and severity of the morbid process. This subject has been recently examined by Mr. Lawson Tait, who has published the result of his examination of the placenta in the seventeenth volume of the Obstetrical Transactions. In this communication it is stated that the original factor is a diseased condition of the blood, leading to an increased destruction of the epithelium lining the fœtal vessels, whereby spasm and thickening of the arterioles in the placental tufts are brought about, the changes being similar to those Dr. George Johnson has pointed out as being associated with contracted kidneys. How far this view will be adopted by subsequent observers is a matter on which I am unable to offer any opinion. Dr. Saundby and Mr. Howard Lowe have sent me the following note on the changes in a placenta of this kind, obtained in my practice from a patient who has aborted or borne dead children on three previous occasions :—

"*Naked Eye Appearances.*—The placental tissue presented patches of a grey, shrunken appearance interspersed with tolerably healthy tracts ; the shrunken parts were dense to the feel, and on section their colour passed gradually from the red of the apparently normal tissue to grey and yellow. In the last-named portions the cut surface of the section was quite smooth, and had lost the spongy appearance of healthy placenta. The disease traversed the whole thickness of the organ, but was most marked on the uterine surface.

Microscopical Appearances.—The part selected for microscopical examination was that which presented a moderate degree of morbid change; in it, throughout, the normal placental structure had undergone great alteration; the villi were converted into young granulation tissue resembling myxoma, in or upon which a few minute capillaries could been seen. Around some of the villi there were small blood-vessels filled with blood corpuscles, and presumed to be of new formation. Between groups of villi there were large spaces, probably representing the maternal sinuses, filled with a fibrinous network containing nuclei and the remains of red blood corpuscles. The section was traversed by tracts of nucleated connective tissue of more advanced organisation, in which here and there small blood-vessels could be seen, the lumina of which were diminished, while their coats were concentrically hypertrophied."

They propose to investigate the subject further as opportunity offers, with a view to determine more fully what the precise nature of the morbid change may be. So far as the above detailed appearances warrant their expressing an opinion, they see nothing inconsistent with a hypothesis that we have to do with a simple chronic inflammatory process. It is a pathological law that tissues which are the subject of the inflammatory process revert to an embryonic type of structure, and so far we may recognise in the myxoma-like appearance of the altered placental villi a reversion to the structure of the connective tissue out of which they were differentiated and which still exists in the tissue of the umbilical cord. The hypertrophy of the coats of the blood-vessels to which they have alluded has been shown by the observations of Friedlander to be an appearance invariably found around new growths of every sort and description which have reached a certain stage of organisation. This is, in fact, merely to assert that the coats of the vessels share in the processes going on in the tissues of which they form a part.

The subject under consideration would be incomplete if I failed to allude to the vicissitudes of the fœtus during the intra-uterine life. Many of these have been foreshadowed in speaking of the diseases of the placenta. Sometimes the primitive cells are endowed with extraordinary vital force, and if they are supplied with a sufficient pabulum, the child grows until at the time of its birth it is of inordinate proportions. In other instances the cell hyperplasia is feeble, or the blood supply is inadequate, and a thin, ill-nourished infant is the result. As we have already seen, the child may die at any period of its uterine existence from the causes already pointed out. Thus it may die from congestion, inflammation, and effusion, or from the opposite condition of anæmia and defective blood supply ; or from the placenta becoming charged with carbonised blood, which will not only cause the death of the fœtus from apnœa, but will also set the uterus in motion, so that it will throw off its contents. The poison of small-pox passing through the blood of the mother does not always seem to influence the fœtus, as evidenced by two cases which fell under my notice where the mothers had small-pox whilst pregnant, and the children received and were influenced by the vaccine virus in the same manner as if they had not been in contact with small-pox. Once I saw a child born with a well-marked circular copper-coloured syphilitic eruption upon it ; but usually syphilitic children are born free from eruptions. Infants are liable to inflammations and effusions into their serous cavities ; also the three membranes out of which the infant is formed are liable to morbid states of an inflammatory character ; hence we get deformities. When the serous membrane is affected we have hydrocephalus, anencephalous, spina bifida, and when the arches, or laminæ ventrales do not reach over and close we have harelip, cleft palate and hypospadias. Sometimes the serous membrane is arrested in its growth, or the proliferation is checked by adhesive bands, and then we have amputated limbs ; in other instances two vesicles are enclosed in one envelope, and then we get a double monster or an included twin, such as are commonly seen in our museums ; less rarely the vascular membrane out of which the fœtal blood-vessels are formed is the seat of a morbid process, believed by

Peacock to be inflammatory, and from it we have congenital irregularities of the heart and blood-vessels; the mucous coat which forms the fœtal glands and viscera would seem to be less liable to disease than the other two membranes, since deviations in the viscera are less common.

Gentlemen, my task is finished. I thank you for your attendance and for the attention you have paid to what I have so imperfectly set forth; if anything I have said shall stimulate others to enquire into the secrets of nature, I shall be amply rewarded for the agreeable duty which I have been called upon to fulfil.

THE FUNCTIONAL STAGE OF GRANULAR KIDNEY.

BY ROBERT SAUNDBY, M.D. EDIN., M.R.C.P. LOND., ASSISTANT PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

DURING my term of office as pathologist to the General Hospital, the fact, in connection with the *post-mortem* appearances, which impressed itself most forcibly upon me, was the remarkable frequency with which well-marked cases of granular kidney were found. By far the larger proportion of these did not come to me with a diagnosis of Bright's disease, but were in cases of surgical injury, heart disease, etc. In a former article* I gave a list of these conditions, and stated that the kidneys were granular in 18 per cent. of all my autopsies, excluding children.

Dr. Mahomed, to whose valuable papers on various aspects of Bright's disease I shall frequently have to refer, has stated† that out of 150 cases of persons over fifty years of age, recorded in the pathological registers of Guy's Hospital, 62 or 1 in 2.42 cases were noted as having granular kidneys. Since I have been engaged in the out-patient department I have found cases presenting the clinical characters of chronic Bright's disease even more commonly than my pathological experience had led me to expect, so that it appears to be no exaggeration to say that this condition plays by far the largest part in the pathology of persons past middle life, being the latent explanation of the rheumatic pains, lumbagos, anginas, dyspepsias, headaches, vertigos, bronchitic attacks, pleurisies, cardiac failures, and apoplexies, so frequently met with. In the article already quoted I gave the reasons which have led me to adopt a modification of Bright's views on renal disease, and to place the renal mischief at the end instead of the beginning of the pathological series. Dr. Mahomed takes the same view, and has brought forward much original evidence in support of it. Bright's disease, like other diseases, originates in a functional disturbance, but in an essentially chronic disturbance which takes half a life-time in many cases to effect the structural changes which are capable of anatomical demonstration. This disturbance is primarily in the digestive organs, and results in the imperfect oxidation of nitrogenous material, a function which recent observations have shown to be chiefly located in the liver. This imperfectly oxidised material circulating in the blood has a directly stimulating effect upon the kidneys (Heidenhain), maintaining in them a constant state of functional hyperæmia, and by increasing the general capillary resistance, raises the systemic blood pressure so as to keep up a permanent strain on the organs of the circulation. These conditions are necessarily aggravated if, as so often happens, the bowels are sluggish. Such a state of things is immediately characterised by dyspepsia, constipation, lassitude, headache, muscular pains, coldness of the extremities, tendency to pharyngeal or tracheal catarrh, and later on results in cardiac dilatation and hypertrophy, dyspnœa, chronic bronchitis, chronic gastric catarrh, arterio-capillary fibrosis, aortic valvulitis, interstitial nephritis; finally causing death by rupture of a small vessel, or failure of the heart or kidneys, or an intercurrent attack of an inflammatory kind, to which the tissues in such cases seem especially prone. In a paper in the last number of Guy's Hospital Reports* Dr. Mahomed has drawn attention to the possibility of recognising this early functional stage, the cardinal sign being high arterial tension, a condition which, he believes, is quite pathological in persons under thirty years of age, occurring in about 8 per cent. only. Last quarter I referred† to some researches by Beneke, which seem to suggest, from the state of the circulatory organs in the decade succeeding puberty, that the arterial tension at this period is normally high. But as Beneke advances no direct proof of this condition, Dr. Mahomed's statement must be allowed to have the value of a positive, although unconfirmed, observation. Albuminuria, in Dr. Mahomed's opinion, is not a constant or even a common symptom of this diathesis, although it is present occasionally. Since Dr. Clement Duke's‡ paper directed my attention to the subject I have been very much struck with the frequency with which albuminuria is present in persons under thirty years of age who are free from other evidence of organic disease. In a paper I published§ a few months ago I gave a table which showed how common such cases are; twenty-eight out of forty-one, or 58.5 per cent. of those under thirty, and free from evidence of organic lesions, had more or less distinct albuminuria. Since then I have been able to assure myself that it is at least common among young females; but the sources of fallacy from admixture of blood or pus make it impossible to construct a similar statistic for them.

---

* "The Polyuria of Granular Kidney." Birmingham Medical Review. 1878. New Series. Vol. I., p. 101.

† "On Chronic Bright's Disease and its Essential Symptoms." By F. A. MAHOMED, M.D. Lancet, March 29th, 1879.

---

* "Some of the Clinical aspects of Bright's Disease." By F. A. MAHOMED, M.D. Guy's Hospital Reports. Vol. xxiv. 1878.

† "Albuminuria." Birmingham Medical Review, July, 1879. P. 222.

‡ "The Albuminuria of Adolescents." British Medical Journal, November 30th, 1878.

§ "The Diagnostic Value of Albuminuria." British Medical Journal, May 10th, 1879.

Thirty-six years ago Prout wrote, "The urine is liable to become albuminous from certain derangements of the system in general, and of the kidneys in particular, which cannot at present be otherwise defined than as *functional* derangements; though it is not improbable that such assumed functional derangements may partake of the character of incipient disease of the kidneys."[*] This expresses the state of things exactly as it is now, in spite of the great additions to our knowledge of the clinical history of albuminuria.

In a paper read in the Medical Section of the British Medical Association at Cork,[†] I have shown that the albumen present in these cases is almost, if not always, ordinary serum albumen, agreeing in its chemical and physical characters with the albumen of Bright's disease. In the article on albuminuria already referred to, I gave additional evidence in favour of the view maintained by Bartels, that albuminuria is always the consequence of increased pressure in the renal vessels, either arteries or veins, or to an altered state of the walls of the vessels, or to a combination of these causes acting together. Therefore the overflow of serum albumen from the blood-vessels into the renal tubes may occur whenever the functional hyperæmia carries the blood pressure in the glomeruli above a certain point. Consequently, *we may expect albuminuria to be a frequent accompaniment of transient or permanent alterations in the functional activity of the kidney, and an early sign of the degree of stress which is being made upon its circulation.* This is opposed to Dr. Mahomed's opinion, which is, that albuminuria results from epithelial changes, and that it is a rare symptom even in advanced cases of interstitial nephritis. But in order to detect faint degrees of albuminuria it is necessary to use greater care than has been usual. Dr. John Munn, of New York, has summarised these necessary precautions in a paper, an abstract of which is given at page 293 of this volume. The urine must be *clear;* it should be obtained *after breakfast.* Test by filling a tube two-thirds full, acidulate with a drop or two of dilute *acetic acid;* boil the upper third; acidulate again strongly to dissolve phosphates, and hold the tube against a shaded background with the light falling from above, when a very faint cloud will be visible by the contrast it presents with the clear unboiled urine below. Dr. Lauder Brunton speaks strongly in favour of acetic acid in an article on albuminuria in the thirteenth volume of St. Bartholomew's Reports; and my experience enables me to recommend this plan as much more certain than cold nitric acid, boiling with nitric acid, or picric acid.

---

[*] "On Stomach and Renal Diseases." P. 126.

[†] British Medical Journal, August 23rd, 1879. P. 290.

The coincident occurrence of a very large number of cases of advanced kidney disease in persons past middle life, together with a remarkable number of cases of functional albuminuria in young persons, naturally suggests the enquiry, whether the latter may not represent a functional stage of the condition which, later in life, leaves marks of its presence in actual structural alterations? If the albuminuria coincide with high arterial tension, with dyspeptic derangements, and with other symptoms recalling in a minor degree those of typical granular kidney, the doctrine of a functional stage of chronic Bright's disease becomes at least so probable as to be of considerable practical interest. The study of the notes of a number of cases has convinced me that there is plenty of evidence of this kind. As an illustration I will quote the following case.

Case I.—Dyspepsia—Albuminuria—High arterial tension.

T. S., 15, labourer.—Complained of pain in the chest, and palpitation; has had a cold all winter; never had gonorrhœa; had measles six years ago; scarlatina twelve years ago; no other serious illness; never had dropsy.

He is a tall, raw-boned lad, with a tendency to blueness about the cheeks and nose. His knuckles are bluish, and his hands and feet are often cold. Lungs are normal, except slightly prolonged expiration. Heart not enlarged, apex in fifth interspace 1½ inches to left of sternum; first sound at apex reduplicated ; second sound in aortic area accentuated. Liver dulness 3½ inches in vertical mammillary line. Appetite good ; feels oppressed after eating ; bowels confined. Urine pale, clear, acid, sp. gr. 1009 ; a little albumen, no sugar or bile, one or two pale hyaline casts and a few epithelial scales (on two subsequent occasions no casts were found) ; ophthalmoscopic signs negative (Mr. Eales). The pulse was not diminished by 300 grammes pressure. No satisfactory tracing was obtained. The above account affords evidence of dyspepsia accompanied by signs of increased arterial tension in the altered heart-sounds and resistant pulse, and albuminuria. The next two cases are even more suggestive.

Case II.—Dyspepsia—Acne indurata—Albuminuria—High arterial tension.

T. B., 19, bricklayer.—Complained of eruption on his face, which had been present for two years ; also complained of face-ache. Has always had good health. Was in hospital with a gun-shot wound three years ago ; no other serious illness ; has never had scarlatina, diphtheria, typhoid fever, or dropsy ; never had any swelling about eyelids ; does not suffer from palpitation. Father and mother both suffer from indigestion. Two brothers living, and healthy ; one brother and three sisters died young. Patient is a strongly-built, well-developed young man ; his face is dotted with small, indolent, reddened papules (acne indurata). Tongue posteriorly covered with a dirty paste, anteriorly, red. Caries of second right molar (accounting for face-ache). Fauces reddened and studded with swollen mucous follicles. Occasional pain in stomach, heartburn, nausea, flatulence, and constipation. Liver dulness 4½ inches in the mammillary line. Appetite, in his own words, "extraordinarily good." No lumbago ; often giddy. Chest well formed, expands well ; nothing abnormal in lungs. Heart's apex in fifth interspace, three inches to the left of the sternum ; first sound at apex reduplicated ; second sound at aortic area accentuated ; pulse 72. No pain or difficulty in making water ; seldom gets up at night to do so ; urine pale, clear, acid, 1012; a little albumen, no sugar or bile; no casts or crystals. Ophthalmoscopic signs: right eye, one white glistening speck on the retina above and outside the fovea centralis, near a branch of the retinal artery. Left eye, negative (Mr. Eales).

Case III.—Dyspepsia—Albuminuria—High arterial tension.

F. K., 22, engraver.—Complained of pains in the head and face and general weakness. Present illness has lasted a month. Previous health always good; has never had scarlatina or any serious illness. Father suffers from rheumatism, family otherwise free from disease. Patient engages actively in athletics, and has recently felt faint after playing football. Has not noticed any œdema of his eyelids. Does not get up at night to make water; no lumbar pain. Pain in face and head due to the carious stump of right upper molar; does not often suffer from headache. Has recently been short of breath, and has a slight cough without expectoration, chiefly at night.

Patient is a tall, well-developed young man. His chest is well formed, and, with the exception of slightly harsh respiration, there are no signs of disease in the lungs; fauces are reddened. Has recently suffered from palpitation at night after playing football. Pulse 50, regular, firm. Heart's apex in fifth intercostal space, 2 inches from the left edge of the sternum. First sound at apex reduplicated; second sound in aortic area accentuated. Is habitually a large eater, but recently his appetite has diminished. Has pain between the shoulders, and a bad taste in his month; tongue red, papillæ elongated, deeply furrowed transversely; bowels confined. Urine pale, clear, acid, 1009; a trace of albumen; no casts or crystals. Is sometimes giddy; eyesight good; has never had fits. Ophthalmoscopic signs: right eye, one small white spot near branch of retinal artery, near yellow spot; left eye, signs negative (Mr. Eales).

These two cases are very like one another, and differ from the first in not being accompanied by the same debility and evident feeble capillary circulation. The specks in the fundus oculi were exactly like those seen in advanced cases of granular kidney. These ophthalmoscopic appearances have been noted in about a third of the cases which have been examined for me by my friend Mr. Eales; in some he has observed relative fulness of the veins, such as is also common in Bright's disease. All three cases agree in having urine which was clear, pale, and of low specific gravity. The urine of Case I. was examined microscopically three times, and hyaline casts were found the first time. In Cases II. and III., the microscopical examinations were made only once in each case, and were negative so far as casts or urinary crystals were concerned. In other cases uric acid and oxalate of lime crystals have been found.

The next four cases are illustrated by sphygmographic tracings taken with Pond's instrument. Figures 1 and 2 represent high and low tension pulses respectively. The height of the predicrotic wave, or upper of the two waves on the downstroke of the tracings, is the gauge of the amount of tension; in fig. 2 the predicrotic wave is scarcely represented at all. The first of these tracings was taken from a case of granular kidney, and the second from a case of acute phthisis; the characters of the pulses were quite easily recognised by the finger. A scientific explanation of the pulse tracing has not yet been made, and the above is put forward as simply empirical; it is that which receives the support of Dr. Mahomed, whose experience with the instrument is, perhaps, greater than that of any other person in this country.

Case IV. — Dyspepsia — Albuminuria — High arterial tension.

A. C., 23.—Complained of pain in his left side, worse after food; has been ill three months. Has never had gonorrhœa. Bowels open. First sound of heart reduplicated at apex; second sound in aortic area, accentuated; heart not enlarged. Urine pale, clear, a faint trace of albumen. The pulse tracing taken at the same time is shown in fig. 3.

Case V.—Dyspepsia—Albuminuria—High arterial tension.

J. W. R., 17.—Complained of pain in forehead and wind after food. Bowels confined. Heart not enlarged; first sound at apex reduplicated; second sound at aortic area, accentuated. Urine pale, clear, contained a trace of albumen, no casts or crystals. The pulse tracing taken at the same time is shown in fig. 4.

The next case was a more serious one, and at first I feared renal degeneration had commenced.

Case VI.—Dyspepsia—Albuminuria—High arterial tension.

N. H., 27, clerk.—Complained of bad appetite, loss of flesh, and pain in his left side. He gets up frequently at night to make water; bowels loose; eyesight dim; ophthalmoscopic signs negative, except pulsation in retinal veins (Mr. Eales). Has never had syphilis or gonorrhœa. Never had any serious illness except a bad cold eighteen months ago. Heart's apex in fifth interspace, 2¾ inches to the left of the left edge of the sternum. First sound of heart reduplicated at apex; second sound accentuated in aortic area. Lungs healthy. Urine high coloured, contains a dense cloud of albumen. A week later there is a note of "copious albumen;" again, after fourteen days, no albumen. Since then there has been a very faint trace on most occasions. He has been under observation more than three months. He no longer gets up at night to make water. On his last visit the cardiac sounds were as noted above; the urine was pale, clear, 1017, contained a faint trace of albumen; his bowels were open. The pulse tracing taken on that occasion is seen in fig. 5.

Case VII.—Dyspepsia—Bronchial catarrh—Albuminuria—High arterial tension.

W. S., æt 27.—Complained of shortness of breath and cough. He had done no work for ten weeks, and has been ailing for two years. He drinks no tea or beer, as he has found by experience that they disagree with him. He gets up to make water. Suffers from lumbar pain. His eye-

FIG. 1.

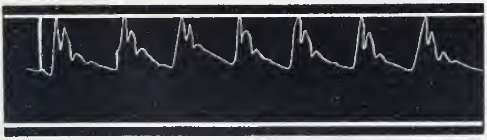


FIG. 2.

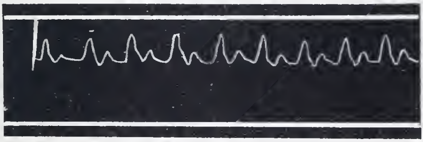


FIG. 3.

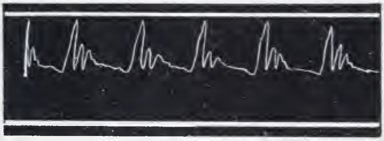


FIG. 4.

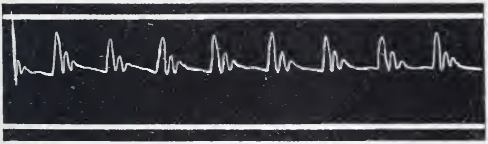


FIG. 5.

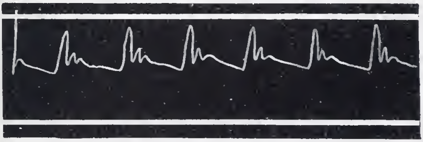
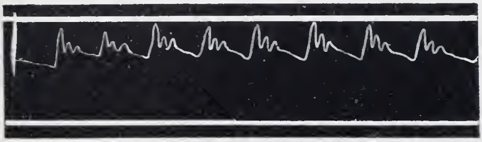


FIG. 6.



sight is middling. Ophthalmoscopic examination shows only fulness of retinal veins (Mr. Eales). His heart's apex is in the fifth interspace inside the nipple. The first sound is reduplicated, and the aortic second accentuated. A few rhonchi over lungs. Pharynx congested. Urine pale, clear, 1017, acid, contains a trace of albumen. The pulse tracing taken at the same time is shown in fig. 6.

All the cases conform to Dr. Mahomed's description by presenting signs of high arterial tension, at least in the alteration of the heart-sounds ; but in some I could not obtain characteristic sphygmographic tracings, which was due to my want of skill. But there are reasons for believing that albuminuria may precede any very marked rise in the general blood pressure. In my article on the polyuria of granular kidney I showed that the increase in the renal secretion is the consequence of the diuretic effect of the material circulating in the blood. This diuresis has been proved by Ustimowitsch to be independent of the general rise in blood pressure ; therefore, although we may recognise that the renal and systemic derangements have a common origin in the condition of the blood, they must be regarded as independent of each other. All the cases I have quoted are in patients under thirty years of age. I have met with the symptoms in a boy of eleven, and after thirty they are, if anything, more common ; but as life advances the probability of structural alterations having occurred becomes proportionately greater, and the symptoms and signs more nearly approach those of typical granular kidney.

The recognition of these cases is far easier than their successful management, as the patients are unwilling to submit for long to the necessary restrictions ; but the general principles of treatment are easily deduced. Most of them eat and drink too much, and, as Prout justly observes, "with reference to diet, *quantity* is often of infinitely greater consequence than quality. Thus a *full meal*, whether of animal or vegetable matters, or of a mixture of the two, will usually produce a deposition of gravel in predisposed individuals, in whom a *spare* meal of the very same materials is not followed by such deposits." Too much animal food must not be allowed, and both beer and tea, as well as stronger drinks, should be indulged in very sparingly, or not at all. The cutaneous circulation must be promoted by flannel or woollen under-clothing, by cold sponge-baths, friction, occasional hot baths, or the Turkish bath. The use of hot-air baths in advanced renal disease is routine treatment ; yet the advantages of hot air in promoting cutaneous elimination during comparative health seem to be not only disregarded, but absolutely denied by many practitioners. A little enlightenment on this subject would be not only creditable to us, but beneficial to the public. If the state of the bowels is inactive some laxative must be employed, for which the sulphuretted mineral waters are very appropriate. More good will be obtained from mountain air than from any general drug treatment at home. The low barometric pressure favours capillary circulation, increases oxidation, and after a few days' mountain climbing the lassitude and depression are forgotten, and the patient experiences a feeling of health and well-being to which he has been for long a stranger. As these patients are very liable to chills, they must be cautioned to wear suitable clothing.

DICHLORIDE OF ETHIDENE AS AN ANÆSTHETIC.

BY J. HENRY PALMER, RESIDENT SURGEON BIRMINGHAM GENERAL DISPENSARY.

In the report of the committee on the action of anæsthetics, appointed by the British Medical Association, there is a request that dichloride of ethidene should have a trial from the profession as an anæsthetic agent. It was on this ground that I first used it, and so far I am favourably impressed with it.

The report of the committee shows that while chloroform and ethidene both decidedly reduce the blood pressure, the former does so to a much larger extent than the latter, and often by sudden and unexpected depressions; ethidene producing this effect in regular gradations. It was further shown that these sudden depressions may take place more than a minute after the administration of chloroform has been stayed, and are, therefore, sources of considerable danger. Under chloroform, moreover, the respiratory centres occasionally cease acting, and so cause death. In no one of the experiments conducted by the committee did ethidene cause a cessation of respiration, or of the heart's action. With regard to æther as an anæsthetic agent, it is true that it increases the blood pressure rather than depresses it; but while it has this advantage over chloroform, the length of time taken in producing unconsciousness by it, the bronchial irritation, the struggling and tremor, together with the after vomiting and unpleasant smell and taste, are conditions which, though not perceptibly detracting from its safety, compel us to regard it as an inconvenient agent. As regards taste and smell, ethidene is in no way inferior to chloroform; and so, looking at the experience already accumulated, we may venture to hope that the opinion, that "dichloride of ethidene as an anæsthetic presents all the advantages of æther without any of its disadvantages," will be ultimately found a true one.

Œthidene dichloride ($C_2H_4Cl_2$, an isomeride of ethene dichloride produced from aldehyde) was, as mentioned in the report to which I have already alluded, first used by J. Snow. There is one case of death on record, and that occurred in a subject of heart disease.

In the following cases I administered the preparation on lint; it was the same as used by the committee, and was obtained from C. A. F. Kalbaum, by Messrs. Burgoyne, Burbidges & Co.

1. A female, aged fifty-six years, married; slight bron-

chial breathing at both apices ; heart normal. Chloride of zinc applied to epithelioma (labial). Consciousness was lost in three and a half minutes, and returned without a bad symptom. No vomiting. About four drachms were used.

2. Boy, aged eighteen years, was convalescent from rheumatic fever. Organic systolic murmur at heart's apex, but no perceptible alterations in the circulatory system. Lungs healthy. The operation was a sequestrotomy. In three minutes and forty seconds the boy was completely under the influence of the anæsthetic ; was kept under for thirty-five minutes, and recovered consciousness quite satisfactorily. There was *very slight* vomiting afterwards. A large amount was used in this case, probably more than an ounce, but, from an accidental circumstance, I cannot say the precise quantity. Mr. Baker, the consulting surgeon, who was present, expressed his satisfaction with the action of the anæsthetic, remarking that the pulse was slower, but full.

3. Case 1 repeated. Anæsthesia in *precisely* the same time ; return to consciousness equally satisfactory. No vomiting.

4. A man, aged twenty-five years. Respiratory and circulatory systems normal. Operation for removal of small tumour from scalp. Lost consciousness in four minutes ; was kept under the influence of the drug fifteen minutes, and returned to consciousness quite satisfactorily. There was some struggling, and he took six drachms of ethidene. No vomiting.

5. A female, aged thirty-seven years ; married. Respiratory and circulatory systems normal. Highly nervous. Lost consciousness in four and three-quarter minutes ; remained under the influence of the drug eleven minutes, and returned to consciousness without any bad symptoms. The operation was for the removal of a pessary which had been in the vagina eighteen months, and part of which had become encysted. There was a very little struggling during the first few whiffs. Quantity used between four and five drachms. No vomiting.

In the foregoing cases the condition which impressed me most favourably was the absence of *vomiting*. In only one case did it occur at all, and in that one very slightly and only once.

The *pulse* is somewhat slowed, but remains full. I did not make any numerical observations, but was well satisfied of the general character of it. The *breathing* is not embarrassed, and there is a total absence of all bronchial irritation, and frothing at the mouth, such as is met with in giving æther. *The period required for its operation* is certainly not longer than in cases where chloroform is given ; and from what I have now seen I believe it will be found to be less when we are better acquainted with the use of ethidene. *Struggling* occurred in only one of my cases, and then was fairly well marked.

Dr. R. Macphail contributes a short article to the September number of the Edinburgh Medical Journal on this subject, and in all the cases in which he has used ethidene the results have been favourable.

REPORTS OF CASES.

GENERAL HOSPITAL.

INCOMPETENCE OF THE PULMONARY VALVES *(under the care of Dr. Foster.)*—Eliza B., 25, married, was admitted August 25th. The history, which was only partially obtained, showed that she had been quite well till her last pregnancy, when she became dropsical, and this had persisted. She had never had rheumatic fever. The patient could not lie down, but reclined propped up in bed, breathing rapidly, 36 per minute. There was general anasarca and ascites. Posteriorly both bases were dull. There was a double murmur, loudest to the left of the sternum; pulse 96. Temperature normal. Urine scanty, 1026, acid, contained albumen varying in amount from one-fifth to five-sixths of a column. She died on September 2nd.

Autopsy (performed by Mr. Howard Lowe) September 3rd.

External appearances.—The body was that of a young woman, well nourished; slight rigor mortis and hypostatic congestion; face livid; great general dropsy; abdomen distended.

Thorax.—Pericardium contained about half a pint of clear serum. Heart immensely dilated and hypertrophied, especially on the right side; weight, twenty-four ounces. All the cavities were gorged with dark recent clots. Muscular substance rather pale and opaque; under the microscope the fibres were found to be markedly fatty and pigmented; tricuspid orifice dilated, admitting six fingers; *pulmonary valves incompetent, very much thickened at free borders, the lunulæ being quite obliterated, and the c. arantii enlarged; one section of the valve was very much enlarged and bulging, another was very small and contracted, and so much thickened as to be almost immovable; there were no vegetations in this or on any of the valves; pulmonary artery very much dilated;* mitral orifice dilated, admitting seven fingers; valve segments and chordæ thickened; aortic valves competent.

Both pleural cavities contained a few ounces of clear serum, more in the left than the right; left being small from compression by heart and fluid; both lungs congested, but not uniformly, some parts being soaked with blood, others being pale and anæmic; the branches of the P. Art. when cut across stood out stiffly, as if their walls were thickened.

Abdomen contained a large quantity of serum. Liver rather small; weighed fifty ounces; rather granular on surface; on section, nutmeg-like, from congestion of the intralobular veins. Kidneys rather small; weighed nine ounces; firm, tense, congested; capsules easily stripped; arteries fairly wide: right kidney rather granular on the surface; left, smooth. Spleen not enlarged; tense and congested.

MEDICAL NEWS.

QUEEN'S COLLEGE PRIZE LIST.

Medicine.—Professor B. Foster, M.D.—Medal and first certificate, Cornelius W. Suckling; second certificate, Felix C. Vinrace.

Surgery.—Professors Oliver Pemberton, F.R.C.S., and F. Jordan, F.R.C.S.—Medal and first certificate, E. Augustus Harbord; second certificate, Felix C. Vinrace.

Pathology.—Professor E. Rickards, M.B.—Medal and first certificate, Felix C. Vinrace; second certificate, J. Benson White.

Anatomy.—Professors W. Thomas, M.B., and R. Jolly, M.D.—Senior division: Medal and first certificate, Richard A. Fitch; second certificate, Arthur T. Holdsworth. Junior division: Medals and first certificates, Æq., Frank Leslie Phillips and Septimus Sunderland; second certificate, Henry Shillito.

Practical Anatomy.—Demonstrators B. May, M.B., and H. Eales, M.R.C.S.—Senior division: Medal and first certificate, Arthur T. Holdsworth; second certificate, Richard A. Fitch. Junior division: Medal and first certificate, Frank Leslie Phillips; second certificates, Æq., Septimus Sunderland and Arthur H. Hart.

Physiology.—Professors R. Norris, M.D., T. H. Bartleet, M.B., and A. H. Carter, M.D.—Medal and first certificate, Richard A. Fitch; second certificate, Arthur T. Holdsworth.

Practical Physiology.—Professors as in Physiology.—Medal and first certificate, Arthur T. Holdsworth; second certificate, William Richards.

Chemistry.—Professor A. C. Bruce, M.A.—Medal and first certificate, Frank Leslie Phillips. No second certificate awarded.

Botany.—Professor W. Hinds, M.D.—Medal and first certificate, Frank Leslie Phillips. No second certificate awarded.

Materia Medica.—Professor J. Sawyer, M.D.—Medal and first certificate, Frank Leslie Phillips; second certificate, — Arblaster.

Forensic Medicine.—Professor J. St. S. Wilders, M.R.C.S. —Medal and first certificate, Cecil Birt; second certificate, Andrew Fuller.

Midwifery.—Professors J. Clay, M.R.C.S., and J. Bassett, M.D.—Medal and first certificate, John Lloyd Thomas; second certificate, Richard A. Fitch.

Practical Chemistry.—Professor A. C. Bruce, M.A.—Medal and first certificate, Frank Leslie Phillips. No second certificate awarded.

Sands Cox Prize.—Cornelius W. Suckling.

MEDICINE AND PATHOLOGY.

THE LESIONS OF THE CIRCULATORY ORGANS IN CHLOROSIS AND FUNCTIONAL MITRAL INSUFFICIENCY. —Dr. L. Lewinski records the case of a lad admitted with dropsy and double mitral murmur, who had suffered from acute rheumatism a month previously. At the autopsy they found no trace of endocarditis, but the left ventricle was hypertropied, the mitral orifice was dilated, and the aorta was remarkably narrow, thin-walled, elastic, and the origins of the vessels in the descending aorta were quite irregular; the heart's muscle was not fatty. Reviewing this case, he refers to Virchow's observations on the heart and aorta in chlorosis, and proceeds to discuss what relation they bear to one another. He disputes Virchow's view, that the narrowness of the aorta causes the cardiac hypertrophy, as the narrowness is compensated by the greater elasticity of its wall, and because there is no clinical evidence that the tension in the aortic system is raised above the normal. He believes the functional condition in chlorosis is diminished energy of the cardiac muscle, due to hyperoxidation of the blood, a condition which is compensated in part by hyperplasia, not sufficient to increase the systemic arterial pressure.

The mitral insufficiency has been explained by relaxation of the heart's wall and consequent dilatation of the mitral orifice. He contends that such dilatation could not be caused by the auricle, as its contractile force is too little, while in aortic incompetence the ventricle becomes enormously dilated without giving rise to mitral insufficency. He has found on introducing his finger through the aortic opening into the ventricle of a curarised dog that during the systole no pressure could be felt by the finger above the papillary muscles, although below it was tightly grasped. He describes the mitral valve as being drawn down like a funnel towards the heart's apex by the contraction of these muscles, which there lie close together; and he was also able to feel that the mitral orifice was slightly narrowed at the same time. From this he concludes that the sufficiency of the mitral valve depends upon the proper action of these muscles. When the left ventricle is dilated and acting feebly, the papillary muscles do not come close together, but leave a space between them, when, by weakening of their fibres, they are unable to draw down the velæ. From both these circumstauces mitral insufficiency results, and the ventricle discharges itself partially through the mitral orifice at each systole, and gradually dilates it. —Virchow's Archiv., May, 1879.

RUPTURE OF THE AORTIC VALVE.—At a meeting of the Glasgow Pathological Society Dr. Frew, of Galston, showed a specimen of an aorta with the right anterior curtain torn at its anterior attachment. The valve did not appear to be more than slightly thickened, but the aorta above was very rough, and in parts calcareous. The heart was greatly hypertrophied. Dr. Finlayson, of the Western Infirmary, had the man in his wards, and gave the following details of the case:—The patient was thirty-nine years of age, had been in the army. There was an history of a slight joint affection and an attack of venereal disease, but no definite evidence of syphilis. In February, 1875, he over-exerted himself in a scuffle, and went to bed in an excited state. On lying down he became conscious of a "cooing" sound in his chest, such as he had never heard before, and he could not lie down on his left side without pain. The cooing sound was also heard by his wife. There was no pain in chest perceived during struggle, and no blow in that region. Three months after he began to complain of pain in left side, dyspnœa on exertion, cough, and sputa streaked with blood. When examined it was found that the cooing murmur could be heard at a distance of a foot or two on simply bending the head over the patient's chest. A loud murmur replaced second sound, its maximum intensity being at lower part of sternum. A purring tremor was also felt in this situation. A much slighter murmur following first sound could be heard at apex and at aortic cartilage; a certain amount of hypertrophy of left ventricle could be made out; no evidence of aneurism. The pulse and its sphygmographic tracings presented the usual features observed in aortic regurgitation. The arteries throughout the body pulsated visibly with great distinctness. No albumen in urine. When again seen in February, 1878, the cardiac hypertrophy was greatly increased; he had slight albuminuria, systolic and diastolic aortic murmurs still present; cooing no longer audible at a distance from chest; no evidence of aneurism. He died March, 1879, with dropsy, etc.—Glasgow Medical Journal, July, 1879.

THE APEX-BEAT.—Filehue and Penzoldt have published some interesting observations upon the apex-beat of the heart. They divide the numerous explanations of the impulse into two categories: in one of which the cause is attributed to a locomotion of the heart along its axis, in the other to a change of form; but they point out that most writers take a middle course. From experiments the authors assert that during the systole the apex moves upwards and to the right, instead of downwards and to the left, in its forward motion. Recoil and vascular extension can lessen the upward and dextral movement, but cannot be concerned in the origin of the apex-beat. The method of research employed was to remove a few ribs in rabbits, guinea-pigs, and dogs, so as to expose the pleuræ and pericardium, which were not opened. The movements of the heart and lungs were clearly seen, but it was difficult to differentiate systole and diastole. By stimulation of the peripheral end of the vagus the heart was stopped, and the first movement which followed the pause was clearly the systole. To eliminate the respiratory influences the central end of the vagus was stimulated, and breathing thereby suspended. The lowest portion of the heart, apparently the apex, pressed the pericardium and pleura forwards, and a fine needle inserted at this point showed that the apex was drawn upwards in systole and at the same time moved downwards and to the left. To be certain that the part of the heart causing the impulse was truly the apex, a fine needle was, after artificial stillness had been induced, inserted at the point of impulse, and on opening the envelopes it was found exactly transfixing the apex of the left ventricle. A woman was shown at the Congress of Surgeons, by

Kolaczek, who had removed part of the thoracic wall. She was afterwards sent to the authors, and they found that during systole the apex of the heart moved forwards, upwards, and to the right. In the case of Groux, the apex was never seen; and the authors contend that in Skoda's case of absent sternum he never saw the apex; while in Wilckens' case there was too much confusion for certainty, and they are confident that the apex can only move *forwards, upwards,* and towards the *right* during systole. —Centralblatt für die Medicinischen Wissenschaften, 28th June and 5th July.

A CASE OF DISSEMINATED SCLEROSIS.—Dr. Joseph Coats reports a case of disseminated sclerosis in a man aged forty-nine. Admitted complaining of loss of power in legs, and, to a less extent, in arms. Fourteen months before suddenly lost power of grasping with right thumb and forefinger; power regained next day; at same time loss of speech for a few hours, never perfectly regained. A month later loss of power in legs and aggravation of aphasia, which gradually improved. On 2nd May, 1878 (a few years after first onset), marked tremor ushering in aggravation of symptoms; since then inability to walk, and well-marked aphasia. No tremor when lying in bed, but when seated his head nods; tremor very marked in attempts to perform movements. Can stand with little difficulty even with his eyes closed. The affection of speech is a certain imperfection of articulation and a monotonous, weak and childish voice. No true aphasia; no nystagmus; occasional diplopia which disappears as eyes are steadied on object. Ophthalmic examination, by Dr. T. Reid, showed: left eye, marked congestion of disc, the margins of which were undefined, and the vessels curved as if the disc were elevated; right eye, slight redness of disc. No affection of sensation. Hearing perfect. No wasting of muscles. When he turns his head to either side a sense of vertigo is experienced. Expression of face vague. (Termination of case not recorded. Rep.)—Glasgow Medical Journal.

DIPHTHERITIC PARALYSIS.—M. Rivet reported to the Société Anatomique a case of paralysis of the soft palate, the upper extremities and diaphragm, resulting from diphtheritic angina. M. Déjérine had examined the anterior roots of the nerves, and said that, as in the preceding six cases which he had related, these roots were atrophied, in consequence of a true neuritis with fatty degeneration of the myeline; in fact, it was another case of anterior tephromyelitis observed in diphtheritic poisoning; the posterior roots were healthy. —Le Progrès Médical, No. 35.

THE TEMPERATURE OF PERITONITIS.—Dr. Lapponi reports two cases of peritonitis in which the temperature was normal (37° C.)—Le Progrès Médical, No. 35.

IS THERE A PRIMARY LATERAL SCLEROSIS OF THE CORD?—R. Schulz described in the Arch. d. Heilkunde, xviii., p. 352, the case of a shoemaker, aged 29, as "lateral sclerosis," in whom the symptoms were: Paralysis of the upper and lower extremities, extreme contraction of muscles, no affection of sensibility, intact bladder and sexual functions, much increased tendon reflex. These conditions remained unchanged until death. The autopsy showed a cyst the size of a hazel nut, situated in the position of the left olivary body and extending towards the right, containing a brownish red fluid, and at the base tumour formation (geschwulsttheile); the entire medulla oblongata was penetrated with a loose redish-brown tumour (glioma), in whose periphery asmall zone of nervous substance remained. In the cord there was on both sides secondary lateral sclerosis in typical form. The tumour itself had given rise to no symptoms. The apparently primary lateral sclerosis was not primary but consecutive. A second case, also related in the above paper, was very little less characteristic of what has been called lateral sclerosis; but other symptoms (giddiness, double vision, vomiting) supervened, and led to a diagnosis of tumour at the base of the brain. The autopsy verified this diagnosis. Between the right hemisphere of the cerebellum and the pons, from the crus cerebelli ad pontem outwards, there was a dense, irregular, bluish-red tumour, the size of a hen's egg (spindle-celled sarcoma). The most careful examination of the spinal cord showed no trace of sclerosis. In a third case, first published now, a labourer, aged fifty-four, with increasing paralysis of the extremities, muscular contraction, intact sensibility, and bladder and sexual functions, with increased tendon reflex, there was found *post-mortem* a perfectly normal cord and a colossal hydrocephalus internus. According to Schulz, no such thing as primary ascending lateral sclerosis exists. The symptoms occur when either a chronic disease of the pyramidal columns has established itself along the whole length (Erb.), or when a functional irritation of the pyramidal columns occurs without any material changes being present.—Schulz. Deutsches Arch. für Klin. Med. Vol. xxiii., s. 343.

CHANGES IN THE SYMPATHETIC IN A CASE OF PROGRESSIVE PERNICIOUS ANÆMIA.—Dr. Brigidi reports a case of progressive pernicious anæmia, in which the autopsy revealed interesting changes in the cœliac plexus, but no fatty change or other lesion in the heart and other viscera. In the fresh state the plexus presented an excessive proliferation of nuclei, so that in many places the nerve-cells were destroyed; in other places these cells seemed pigmented, but were cleared up by the addition of reagents. The blood-vessels were empty. In ganglia, hardened in alcohol, the nerve-cells could only be found in isolated spots; in the greater part of the sections they were replaced by groups of small elements, which resembled nucleoli. From the microscopical appearances, Dr. Brigidi constructs the following chart of the pathological process:—The endothelium lining the capsules of the ganglia began to proliferate abnormally, destroyed the nerve-cells by pressure, and formed granulations, some of which assumed a bronzed or brown colour, while others underwent fatty degeneration. The further this fat development proceeded, the more the nerve-substance disappeared, until finally the proliferation of nuclei persisting, the entire nerve-substance was destroyed, and its débris was found dispersed in the newly-formed nuclear growth. The nerve fibres of the ganglia had likewise undergone fatty degeneration. The empty blood-vessels of the ganglia also presented an excessive proliferation and accumulation of the endothelium. Around the ganglia there were thick layers of connective tissue, which was but poorly supplied with nerves.—Allg. Med. Cent.-Zeit. No. 98.

ROSENSTEIN ON BRIGHT'S DISEASE.—At the International Medical Congress held at Amsterdam, Professor Rosenstein, of Leyden, read a paper on Bright's disease, the following being his conclusions:—1. The anatomical renal lesions, which determine the general symptoms of Bright's disease, affect the parenchyma as much as the connective tissue of these organs. 2. There is neither an exclusively parenchymatous nor an exclusively interstitial nephritis. It may be affirmed that wherever true diffuse nephritis takes place, both histological elements are affected. 3. The final product of diffuse inflammation is the white or the red granular kidney. Anatomically, they form the *atrophied kidney*, and differ only in that in the former the parenchyma, in the latter the interstitial tissue is more affected. Clinically, they may be distinguished by the analysis of the urine. The symptoms of atrophy are common to both. 4. Clinical observation makes it probable that a period of tumefaction precedes the primary cirrhosis in both cases. 5. Bright's clinical descriptions apply especially to the white granular kidney. It is certain that in this form the morbid process passes through two stages.—Le Progres Medical. No. 37.

THE FORMATION OF HYALINE CASTS.—Dr. Carl Posner has studied the appearances which have been described by Aufrecht and others as hyaline cylinders, *in situ*, by boiling the kidneys so as to coagulate the albumen. By this means, he says, he has shown that these appearances in the tubules are nothing more than coagulated albumen escaped from the blood-vessels, the cells themselves remaining unaltered. He thinks the formation of these cylinders is due to the croupous coagulation of the coagulable albuminous substances under the influence of the not yet dead cells.—Centralblatt für die Med. Wissenschft. No. 29.

THE DIAGNOSIS OF GRANULAR KIDNEY.—Dr. Max Litten believes that a circumscribed, contracting process occurs relatively frequently in the large white kidney. He relates three cases in which, during life, there were excentric hypertrophy of the left ventricle, retinitis albuminurica, and polyuria. In one an apoplexy; in the other, repeated attacks of uræmia occurred. In all there was copious albuminuria, œdema, and numerous morphological elements in the urine. *Post-mortem* examination showed the large white kidney in all three cases. He also gives two new cases of amyloid disease without albuminuria. In one, a woman with phthisis, the liver and spleen enlarged, and the urine was temporarily albuminous; but for eight weeks after the urine was quite normal, although before death slight albuminuria returned, together with anasarca and effusion into the serous sacs. *Post-mortem* examination showed double-sided phthisis and amyloid disease of all the abdominal organs. The other case was one of emphysema; the liver was enlarged, but there was no albuminuria till the last days of life. A girl, aged seventeen, died of nephritis three months after scarlatina ; the kidneys were pale in places, mottled, or very fatty ; in many places the convoluted tubes had completely retained their epithelium, but their lumina were filled with large cuboid cells, originating from the glomeruli, where the thin, flat epithelium which covers the inner surface of the capsule and the arterial tuft was grown into large cuboid, richly protoplasmic structures. Dilatation of the heart may be the consequence of a chronic myocarditis. A previously healthy girl of fourteen, who had passed through a slight attack of nephritis, on the twelfth day after the first rise of temperature, became dropsical, and her urine was albuminous. The urine was scanty, dark reddish-brown, with a copious sediment, consisting of cylinders, epithelium, and urates. She died after three weeks' illness. The kidneys were slightly enlarged, very anæmic, with smooth surfaces ; there were heaps of round cells near the glomeruli, with fatty degeneration and desquamation of the proliferated cells of the glomeruli and capsules, and distributed throughout the kidneys ; thickening of the capsules of the glomeruli, a new connective tissue being formed out of the cells, which gave the capsules a half-moon or sickle-shaped appearance. At the entrance of the *vas afferens* into the capsule this thickening was the least, and it reached its maximum at the exit of the urinary canal. The glomerulus itself was more or less compressed. This quite acute capsular nephritis is altogether distinct from the diffuse interstitial nephritis, which in the sequel of a departing scarlatina develops always more slowly.—Charité Annalen. iv. 1877. s. 150-188. Centr. für die Med. Wissenschft. No. 29.

THOMAS CHASE,
PHARMACEUTICAL CHEMIST,
Formerly with Godfrey and Cooke, London
ISLINGTON, EDGBASTON.

The strictest accuracy and attention is given to the Dispensing of Medicines. Drugs, Chemicals, and Pharmaceutical Preparations of the highest purity. All the latest Pharmacopœia Preparations.

Every description of Aerated and Mineral Waters.

Friedrichshall, Hunyadi Janos, Pullna, Apollinaris, &c., &c.

The natural Carlsbad Salt Crystals, &c. Sponges, Respirators, Disinfectants, Medicine Glasses, Measures, Spoons, &c., &c.

10-79

PALMER AND POWELL,
Chemists, &c.,
FIVE WAYS, ISLINGTON, EDGBASTON.

Drugs and Chemicals guaranteed of the best and purest qualities. Especial attention given to the dispensing of medicines.—Parrish's Chemical Food, Dusart's Syrup, &c. All new chemical and other preparations immediately obtained.

CARLSBAD, VICHY, PULLNA, FRIEDRICHSHALL BITTER WATER, APOLLINARIS, & ALL OTHER MINERAL WATERS.

Friction Gloves, Medicine Glasses, Measures, Spoons, Acid Tubes, &c., &c.

10-79

The Queen's College, Birmingham.

FACULTY OF MEDICINE.

The WINTER SESSION commences on Wednesday, 1st October.

The Opening Address will be delivered at half-past Three o'clock, by Professor JAMES SAWYER, M.D.

SYDENHAM AND QUEEN'S SCHOLARSHIPS.

One or more SYDENHAM SCHOLARSHIPS of the value of Thirty Guineas each will be awarded annually, by the vote of the Council, to the Orphan Sons of Medical Men.

One or more QUEEN'S SCHOLARSHIPS of equal value will be awarded after examination.

These scholarships are limited to the Sons of Medical Practitioners. Further information on application to the Warden, at the College.

WYE HOUSE ASYLUM,

BUXTON, DERBYSHIRE,

FOR THE MIDDLE AND UPPER CLASSES OF BOTH SEXES,

Is beautifully situated in the healthy and bracing climate of the Derbyshire hills, and is directly accessible by the Midland and the London and North-Western Railways.

For terms and other particulars, address the Resident Physician and Proprietor, Dr. F. K. DICKSON.

1-79

BLACKWELL'S
COMPOUND COD LIVER OIL EMULSION.

This elegant preparation contains fifty per cent. of the finest selected Cod Liver Oil, and two grains of the Hypophosphite of Lime in each fluid drachm of the Emulsion.

It is a most convenient and agreeable form for the exhibition of these valuable remedial agents.

It is fluid, and readily miscible with water, milk, &c., while the Oil, being in a very fine state of division, is much more easily digested and assimilated than when given in the usual form.

It is very palatable, and can be taken with pleasure by the most fastidious patient.

IN BOTTLES—RETAIL 1s. 6d. and 2s. 9d. EACH.

Prepared by J. BLACKWELL (late Hipkins),

Pharmaceutical Chemist,

35, BULL STREET (CORNER OF THE MINORIES),

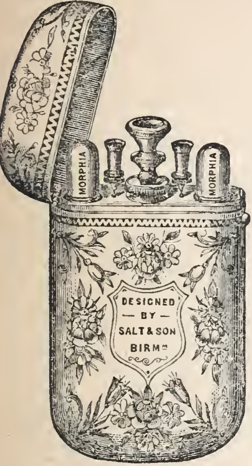
BIRMINGHAM.

10-79.

MODERN INVENTIONS.

SALT AND SON, BIRMINGHAM,

Anatomical Mechanicians to His Royal Highness the Prince of Wales.



SUBCUTANEOUS SYRINGE SET,

42s.

LIGHT, PORTABLE, ELEGANT, AND CONVENIENT

IN ALUMINIUM.

Specially adapted for the Waistcoat Pocket.

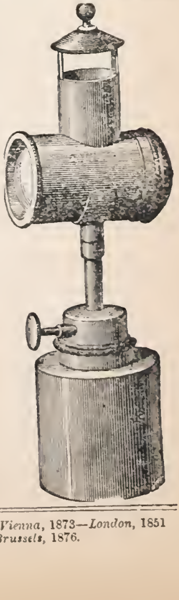
"The Pocket Hypodermic Case of Salt and Son, Birmingham, of which we annex woodcut, is a model of neatness and handiness ; the workmanship is excellent, and the form in which the instruments and the provision of morphia solution are combined is so extremely portable and elegant, that this Hypodermic Case is likely to be a great favourite, now that hypodermic medication is established as one of the most ordinary and highly valuable resources of practice."—*British Medical Journal*, Dec. 22, 1877.

May be sent by post to any address.

New Illuminating Lamp,

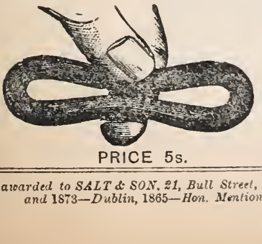
FOR MEDICAL PURPOSES, PRICE 21s.

"The wick is fed by a sponge saturated with Petroleum, and burns for several hours, with a high illuminating power. The flame is enclosed in a lantern to protect it from currents of air—the rays are concentrated by a bi-convex lens, so that the light can be thrown on any given point ; no shade is required."—*Medical Times.*



New Flexible Annular Pessary.

"This Pessary possesses manifest advantages ; it consists of a watch spring coiled spirally, with the extremities left free, and encased in caoutchouc ; it collapses for introduction ; when *in situ* it expands to the circular form, or such other shape as may best accommodate its contact with surrounding parts."—*The Lancet.*



PRICE 5s.

MEDALS awarded to SALT & SON, 21, Bull Street, Birmingham :—Vienna, 1873—*London,* 1851 *and* 1873—*Dublin,* 1865—*Hon. Mention, Paris,* 1867—*Brussels,* 1876.

10- 79

TH HOSPITAL TROCHES,

Prepr iendation of a local Physician) by C. J. ARBLASTER, according a of the Hospital for Diseases of the Throat. The following arr mended, and their use in different cases, according to the T macopœia :—

Troch : Acid : Benzoic, a 'valuable stimulant and voice lozenge' in cases of nervo-muscular weakness of the Throat. **Troch : Althœæ :** 'emollient.'

Troch : Acid Carbolic : 'antiseptic.' **Troch : Acid : Tannici,** 'strongly astringent.

Troch : Cubebæ, 'very serviceable in diminishing excessive secretion of mucus from pharynx, larynx, or trachea. These lozenges closely resemble Brown's Bronchial Troches, of much reputation in America and Europe, but black currant paste is employed and less gum and sugar.'

Troch : Sedativi. Troch : Guaiaci. Troch : Krameriæ.

Troch : Lactucæ. Troch : Potass : Chloratis.

Being made with black currant paste, these lozenges will be found (where an *immediate local effect* is desired) preferable to those of the Pharm. Britannic."

Red Gum Lozenges (Eucalyptus Rostrata) of Australia, recommended for relaxed uvula and throat. **Guarana** (see Dr. Wilks on Headaches). **Eucalyptus Globulus** (tincture and extract), "Fever Tree." **Pepsina Porci,** Bullock and Reynolds. *Troch. Pepsinæ Porci.* **Kirby's Pilul Phosph c** Quiniâ et Nuc Vomicæ. Pil : Phosph : c Ferro. Ol Morrhuæ c Calcis Hypophosph.

Tinct. Tayuyæ, Gelsemini, Hydrastis, &c.

FOREIGN MINERAL WATERS.

HUNYADI JANOS, OREZZA, CARLSBAD, PULLNA, VALS, &C., &C.

CARLSBAD SALTS, GENUINE.

Prescriptions dispensed with Pure Drugs & by duly qualified Assistants only.

The Profession supplied with AERATED LITHIA WATER, POTASS SODA, and SELTZER WATERS, LEMONADE, &c., of any required strength, in Syphons and Bottles.

Mr. ARBLASTER respectfully draws attention to the above. All are carefully prepared, well-corked, thoroughly charged with gas, and to insure purity Artesian Well Water, from the red sandstone, and almost equal in purity to the celebrated Loch Katrine Water, is used.

ALL NEW CHEMICALS, ETC., AS INTRODUCED.

ARBLASTER (LATE CHRISTIAN),

Chemist, and Manufacturer of Aërated Waters,

NEW STREET, & 7, HAGLEY ROAD.

7-79

JOSEPH GILLOTT'S

STEEL PENS.

BY ALL DEALERS THROUGHOUT THE WORLD.

T C

CHURCHILL & SON,
Pharmaceutical Chemists,
46, NEW STREET,
BIRMINGHAM.

T

ESTABLISHED

TRADE MARK.

MDCCCXXVI.

MORRIS BANKS & CO.,

WHOLESALE DRUGGISTS

AND

PATENTEES AND SOLE MAKERS OF

"BANKS'" SURGEONS' LINT, COTTON WOOL,
WADDING, CARBOLISED TOW, &c.,

BIRMINGHAM.

Our Lints are confidently recommended to the medical profession, having been used in numerous hospitals and in private practice by the highest surgical authorities in the United Kingdom.

It is made by steam machinery, from a pure soft cloth, and the entire surface is uniformly and thoroughly linted. It rapidly absorbs liquids, hence its peculiar adaptation for water dressings, &c., and will tear readily both ways.

QUOTATIONS AND SAMPLES ON APPLICATION.

IMPORTERS OF

NORWEGIAN COD LIVER OIL.

This season's Oil is of remarkably fine quality, which we are offering at unusually low rates.

SAMPLES AND PRICES ON APPLICATION.

1—80